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MARYLAND Pharmacist

VOLUME 76, NO. 1

President's Commentary
Membership has its Privileges

The "Maryland Pharmacist"
Celebrates 75 Years of Publication

2000 Election - Official Ballot
Statements of the Candidates

Recognizing Pharmacy Excellence
2000 MPhA Awards

Maximize Your Tax Savings
Charitable Giving

VOTE

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• 2000 MPhA Election •

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Maryland Pharmacist

The Official Publication of the Maryland Pharmacists Association

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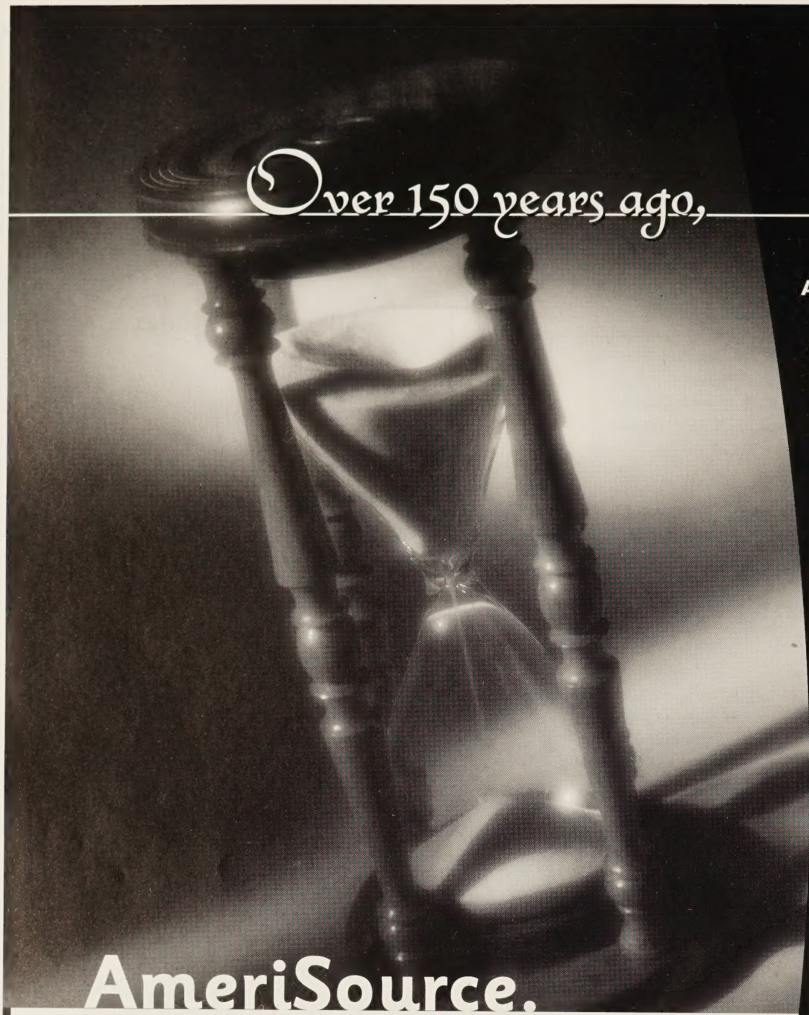

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President's Commentary

Membership has its Privileges

Joseph A. DeMino, P.D.

I recently purchased a new automobile. When I was in the preliminary stages of researching the best value for the car that I wanted I decided to call the MPhA office. I knew that we are constantly adding to our list of value added services that we offer to our members. I was told we had two car buying services—Schaefer and Strohminger and the Motor Vehicle Certification Program (MVCP).

We recently entered into a partnership with ***Schaefer and Strohminger*** which is an auto dealership offering preferred pricing on all new vehicles. I spoke with Nancy O'Kieffe, the marketing manager, who was very helpful. I told her what car and options I wanted and she took care of the rest. She had one of her representatives search to find exactly what I was looking for. Once they found the car to fit my needs they called me with the price. Their program offers prices at $100 to $500 dollars over cost—no haggling. This coupled with the lifetime oil change and discounts on parts and service make this an unbelievable deal. The only problem was the one dealership was on Belair Road in Baltimore and I live in Gaithersburg. I told them this and they found me a car in Rockville, right near my home.

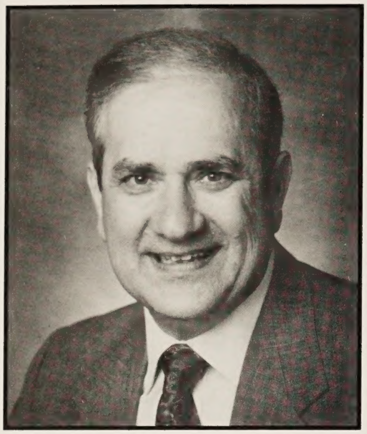
I also checked ***The Motor Vehicle Certification Program***. I called the 800 number and inquired about the program. When you call, you tell the representative what brand car you are looking for. They have one dealership in the area for each manufacturer. I was looking for an Oldsmobile and the dealership in the program happened to be the one in Rockville. What good luck! The MVCP then sends you a certificate and you call the sales manager at that dealership and set up an appointment. Once you are identified as a MPhA/MVCP member, the dealership offers pricing $100 to $500 dollars over factory invoice. Once you get pricing from the dealer, you call back your customer service representative at MVCP and give them the information. Then, they verify that it is the best pricing.

I bought the car that I wanted. Now that I had my new car I wanted to borrow some money to pay for it. Most of the banks had high interest rates and the credit union I used to belong to was out of my way and had high rates. So once again I called the MPhA office to see if we had a credit union we worked with. It just so happened that we had just contracted with ***Atlantic Financial Federal Credit Union*** to offer financial services to our members. The arrangements were just finalized with Rick Webb, the CEO of Atlantic. What perfect timing! I called Mr. Webb and the rest as they say is history. They had the best rates by far—most banks and other lending institutions were charging 7½ to 8%. I joined Atlantic Federal Credit Union and got 5½% for 36 months.

The moral to the story is—I got the car I wanted at the absolute best price and a loan at a very good rate. The whole buying transaction was easy and hassle free. All this was made possible by using the resources available to me through the Maryland Pharmacists Association. We have many outstanding benefits in our association, professionally as well as non-professionally.

If you see my wife driving around town in her brand new Oldsmobile Intrigue just remember we got it easily and hassle free through MPhA, because *membership has its privileges*.

For more information on these and other benefits of membership call the MPhA office at 410-727-0746 and the staff will be happy to help you.



Director's Column

Am I Missing Something?

Howard R. Schiff, P.D.
Executive Director

Recently two reports came across my desk and together they highlight trends and problems in self medication in America today.

The first report was an Associated Press article that appeared in the *Baltimore Sun*. The report said the FDA had eased regulations on dietary supplements and would allow these products to legally claim to treat a variety of symptoms that are considered "common passages of life." These are defined as pregnancy, menopause, adolescence and aging, in other words, from morning sickness to memory loss. The final regulation was viewed as a victory for the dietary supplement business but enraged consumer advocates who say it "allows supplement manufacturers to make claims regarding serious health conditions without any pre-market review by the FDA." In fact, Bruce Silverglade of the Center for Science in the Public Interest said, "That means consumers at the beginning of the 21st century are about the same place as consumers at the end of the 19th century."

The other report raises the issue of quality of dietary supplements. ConsumerLab.com tested Ginkgo Biloba products for level of botanical ingredients. Seventy-five percent of the products tested contained the concentration of ginkgo as claimed on the label. Seven of the 30 preparations tested did not. ConsumerLab.com suggests consumers watch for the CL seal of approval. Products receiving a passing grade can use the company's seal of approval for a licensing fee.

Am I missing something? Is not the first duty of the FDA to ensure that foods and drugs are pure and unadulterated? The dietary supplement industry is under no such mandate and is left to police itself. Without some sort of certification by a third party all I really know is what I've seen myself and I've only seen one manufacturing plant. Does anyone else in that industry meet standards?

The rules for Rx-only and OTC medications are very strict. Bayer has settled with the FTC over claims about aspirin (*Baltimore Sun*, Jan. 12, 2000) and its usefulness in preventing heart attacks. Drug manufacturers are very limited about what they can say. But a dietary supplement company will be able to recommend a preparation for "morning sickness." Will we be certain it contains what the label says it does? Will we be sure it will do no harm? It was not so long ago that Bendectin®, an Rx-only product for that purpose, was taken off the market because it was supposed to cause birth defects. Meanwhile, an unlicensed person in a health foods store will be able to recommend a herbal preparation which may or may not be harmful and will stand a 25% chance of not having what its label says it does.

You really can't blame the dietary supplement industry. It is public demand that has fueled their growth. Not only does the consumer want to maintain his health with dietary supplements but he also wants them free of restrictions from an over zealous bureaucracy. That's the old American independence streak. So are snake oil salesmen. More than likely there will be no government oversight on the industry until some disaster or scandal happens.

The *Maryland Pharmacist* Celebrates 75 years of Publication

A. Scott Rohrbaugh, UMB Pharm.D. Candidate

As the year 2000 has arrived, we wish to take this time to celebrate the 75th year of existence for the *Maryland Pharmacist* as the official publication of the Maryland Pharmaceutical Association, and later the Maryland Pharmacists Association. From its inception in October 1925, it has strived to "fully meet the demands made upon it in developing not only the professional but the commercial aspects of pharmacy, looking to the mutual benefit of the public and pharmacy as a logical result."[1] It is a vision that still holds true 75 years later.

The publication, born in 1925, was the realization of a plan by the executive committee of the Maryland Pharmaceutical Association to develop a vehicle through which increased contact with members was sought and by establishing a "ready and dependable medium of expression"[1] for the association. Thus, "to enable the State Association to fully discharge its obvious obligation to the profession, to make it a real living pulsating force for the advancement of pharmacy, and to make it possible to function continuously"[1] were the basic factors behind the establishment of this professional publication.

To this means, Hon. Samuel Y. Harris, acting president of the Maryland Pharmaceutical Association, appointed Robert L. Swain as editor and a sum of $1,500 was appropriated with the authorization that "as much as necessary be used for the furtherance of this project." It was decided that a copy of the *Maryland Pharmacist* would be sent to every pharmacist in the State, irrespective of membership in the Association. It was the hope of the Association, as it still is today, that all pharmacists in Maryland would maintain membership in the State Association thereby presenting "an almost impregnable front." This unified Association would use its strength to help shape the role of pharmacy and further the profession both in the present as well as in the future. Thus, it was the *Maryland Pharmacist* that would carry the message of the Association and someday make this vision a reality. Pending that day, however, the committee expressed that "the interest of every pharmacist must be considered as of importance by the Association and given thoughtful consideration."[1]

Therefore, in October of 1925, Volume I, No. 1 of the *Maryland Pharmacist* rolled off the press and was delivered to every pharmacist in Maryland as well as the District of Columbia. Future editions would arrive monthly and a yearly subscription could be purchased for $1.00 for the year. In those first editions during the 1920's, advertisements for Noxzema® as "The Miracle Cream" and Resinol® which was indicated for skin irritations, graced the pages. Concerns over the role of pharmacists given the increasing trend of physicians to prescribe ready-made formulas rather than traditional compounded formulas, the adoption of a minimum three years course of study at the pharmacy school, and the proper protocol for storing and dispensing alcohol by pharmacists during prohibition were hot topics of conversation.

The 1930's saw advertisements becoming more numerous within the publication as sellers realized an opportunity to market their products throughout the state. Advertisements for Coca-Cola and Bromo-Seltzer dispensers, wholesale drug manufacturers, and individual drug stores were found throughout the publication. Pharmacists were experiencing increased growth and prosperity following the depression. Sulfur drugs were discovered and ongoing experiments by Alexander Fleming with penicillin were about to bring on the age of antibiotics. And finally in 1938, the Food, Drug, and Cosmetic Act was passed which set standards of practice in pharmacy for years to come. One interesting quotation from an unidentified author in the May 1935 edition implores "Fight the chain stores, not for the benefit of the independent retailer but for the benefit of the country as a whole. They are blood suckers of our economic system, and should be killed off for the public good."[2]

The 1940's brought about certain considerations for pharmacists. In the midst of World War II, Maryland pharmacists did their part to contribute to the war effort. Articles found in the *Maryland Pharmacist* at this time implores its reader to send all available quinine to the Allied troops to combat malaria, civilian penicillin use was being rigidly controlled due to shortages, and the publication called for pharmacists to use "extreme care" when dispensing an unusually large quantity of poisons that could possibly be used in "traitorous acts." Price stabilization was a concern in the postwar pharmaceutical field and pharmacists struggled to develop standardized Fair Trade Laws.

The 1950's and 1960's saw the growth of nuclear medicine, cancer chemotherapy and the development of an effective polio vaccine. The education of pharmacists became longer and more rigorous and by 1960, all accredited pharmacy schools had adopted the five-year program as the minimum requirement. Pharmacy was enjoying unprecedented growth as pharmacists enjoyed an ever increasing volume of prescriptions in this "pre-third party" prescription era. More and more advertisements appeared on the pages of the *Maryland Pharmacist* urging pharmacists to "give customers a reason to buy!" Near the end of this era, a new threat to the traditional pharmacy had emerged and it was termed "the supermarket." Advertisements of the time reflect this ongoing struggle between traditional drugstores and these new "superstores" as in the following by a drug product company: *"Your customers can stare at supermarket shelves until the moon turns to pumpernickel and they still won't find Wash-up, Bidette, Steri-Wipe, Trojans, Nail Polish Remover Pads—So if your customers want these products, they have to come back to you! We only sell to drugstores, always have, always will!"*[3]

The last thirty years represent the modern era of pharmacy. The era of third parties and later HMO's had arrived due to ever rising medical costs. Drugs have been introduced at a staggering rate and the knowledge required by the practicing pharmacist is ever increasing. In the mid 90's, pharmacy became a mandatory six year program at the University of Maryland and chain pharmacies came to dominate the landscape as traditional independents were absorbed. During this time, pharmacists have continued to adapt to an ever changing market and assume many roles in order to survive as a profession. Pharmacy has changed greatly over the past 75 years and the *Maryland Pharmacist* has done well to record and document the struggles, concerns, and visions of our profession. And through it all, the *Maryland Pharmacist* continues to serve as a "ready and dependable medium of expression" which helps to inform, educate, and unite pharmacists throughout the State of Maryland.

1. Swain RL, How it Came to Be. The *Maryland Pharmacist*. October, 1925. I:1:5-6

2. The *Maryland Pharmacist*. May, 1935. X:8:445

3. The *Maryland Pharmacist*. March 1965. XL.6.461

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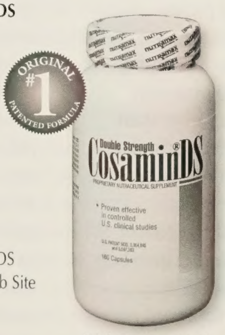

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Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidate for President-Elect

Joe Marrocco, P.D.
3909 Eland Road
Phoenix, MD 21131

Duquesne University School of Pharmacy
Graduation Year: 1973
Practice: Retail Community Pharmacy
Employer: Giant Foods, Inc.

If elected to this position, I will devote my focus and energy to enable MPhA to "chart" the course, not merely to follow it, as changes continue to impact our pharmacy profession.

Pharmacists are demanding more from our organization, and my desire is to respond to you, our membership, in many ways. Resource information, such as our web site, (everybody's on the web, including us) should furnish you with up to date issues. Our membership should be able to reap the benefits of pharmacy industry consumer advertising for Rx medications and products, and be compensated too, for this and clinical trial growth on marketed drugs. Geriatric pharmacy is good news for the industry and our profession, but we must be prudent in our dealings with third parties to be sure that this growing segment of our patient base does not break the "bank."

I have been honored to serve you and MPhA for prior terms, twice as Vice President and twice as Speaker and Vice Speaker of the House of Delegates. These positions enabled MPhA to "team" on a number of important issues that reflect us all. I present to you my near perfect meeting attendance, work with the yearly terms of seven diligent, dedicated presidents of your fine state association, whom like I, volunteer their time to keep our Maryland association at the forefront of pharmacy matters where/whenever applicable.

In final analysis, I pledge to you, my fellow pharmacists of all spheres of practice, an open door policy that is reflective and responsive to your concerns in your daily practice setting. I would routinely welcome your feedback and ideas of where our association should be pointed, and the course it should be "charting."

As your elected leader, I feel this mission is paramount and vital to us all. Thank you for your consideration and support. I would be honored to serve you and our most trusted profession of pharmacy.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidate for President-Elect

Mark R. Sanford, P.D., M.B.A.
401 W. Redwood St., #203
Baltimore, MD 21201

University of Maryland School of Pharmacy
Graduation Year: 1990
Practice: Health System Pharmacy
Employer: University of Maryland Medical System

I am currently serving as your Vice President of MPhA. I have also served as MPhA Speaker of the House of Delegates for 1995-96, Vice-Speaker of the House of Delegates for 1994-95, and Board of Trustee Member from 1994 to 2000. I have been an active member of MPhA since 1987 serving as a member and/or chairman of numerous committees. I am currently chairing the committee responsible for revision of the Constitution and Bylaws, development of member benefits and recruitment and retention of members, as well as monitoring the progress on MPhA Goals and Objectives as set forth by the House of Delegates through the resolution process.

I have also represented MPhA on the Continuing Education Coordinating Council (CECC), the Maryland Board of Pharmacy Task Force on Technician Credentialing, the Voice of Pharmacy Training program in Palm Springs, and the Maryland Pharmacy Leadership Conference.

I am a past President of the University of Maryland School of Pharmacy Alumni Association and an active member of MSHP and ASHP. I am a past recipient of the Marion Merrell-Dowell Distinguished Young Pharmacists Award which recognizes leadership in the profession of Pharmacy.

I have always strived to excel both personally and professionally. I am devoted to my profession, and never hesitate to get involved. My ambition to be at the forefront of change and to help guide our profession into the future has been a major focus of my career. I earned a Masters degree in 1994, and currently hold a position as Pharmacy Operations Manager. I am a Clinical Assistant Professor at the School of Pharmacy where I have the opportunity to have an impact on future pharmacists. I also share my knowledge and experience by participating and presenting practice related issues at local and national meetings.

I believe that I have the background and commitment to contribute to the advancement of Pharmacy in Maryland and strengthen the Maryland Pharmacists Association. I have enjoyed participating in the leadership of the MPhA, and I believe my experience has prepared me to be a strong leader for our organization. If elected to the office of President, I will uphold the ideals of MPhA and work hard to advance the practice of pharmacy and promote the interests of all Pharmacists in the State of Maryland. I will work with the other officers, Board of Trustees, and MPhA members to achieve our common goals and promote pharmacy as an integral part of the healthcare system.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Vice President

Paul R. Holly, P.D.
9012 Scotts Haven Drive
Baltimore, MD 21234

West Virginia University School of Pharmacy
Graduation Year: 1970
Practice: Long Term Care Pharmacy
Employer: HMIS/Omnicare

It would be an honor and a privilege to represent our profession as Vice President of MPhA. I am committed to providing guidance and direction to enable MPhA and its members to meet the many challenges facing pharmacy in the 21st century.

Throughout my thirty years of pharmacy practice, I have been involved in a variety of settings which include: retail pharmacy, hospital pharmacy, government practice, pharmacy store owner, and long term care. My commitment to the profession has included serving as a preceptor for students at the University of Maryland School of Pharmacy. Throughout these various practice settings I have recognized and continue to share your concerns about the many challenges facing pharmacy. I believe we must continue to strive for compensation for cognitive services, which are paramount for positve patient outcomes.

My experience in working with the Board of Trustees has been extensive. I have held positions on the following committees: Membership and By-laws, Convention, and Building. Currently, I serve as Chairman of the Fund Raising Committee. The focus of this committee is immediate as we must fund our renovation of the Kelly Building which houses our association.

With the rapid changes in health care, a strong association is critical to the preservation of *our* profession. If I am elected, I would welcome your input regarding *our* association and all the challenges facing pharmacy. My experience, and commitment, will enable me to contribute to the strength of *our* profession and *our* association. I ask for, and appreciate, your support.

Kevin McCarthy, R.Ph.
6210 Bryantown Drive
Bryantown, MD 20617

University of Maryland School of Pharmacy
Graduation Year: 1980
Practice: Management/Retail Community Pharmacy
Employer: Safeway

I have always made it a priority to maintain my professional and social ties to the university and MPhA. This in itself is quite an accomplishment as I reside in southern Maryland and the distance and other obligations pose formidable obstacles to this effort. In spite of this schedule, I feel compelled to run for the position of Vice President.

I'm currently a Trustee for MPhA, and serve on the Health Care and Legislative Committee. I've serve past terms as Trustee, and I am currently a member of AMCP, NCPDP and MACDS. I've also served as a member on the state medicaid task force.

My experience in pharmacy includes hospital, independent retail pharmacy, and chain pharmacy. I am currently the managed care director, Eastern division, for Safeway Food and Drug. As such, I deal with third party payors and related issues on a daily basis.

I feel the number one issue in pharmacy today is the retail work environment. We have created an occupation and work environment that in some pharmacies borders on chaotic and inhumane. It is also a matter of public safety and the mental and physical health of pharmacists. Although these conditions are mostly due to the proliferation of third party plans and reduced reimbursements, change can be affected. We should look at the laws enacted in other states regarding work load, prescription card standardization and minimum reimbursements. There is hope for our profession. As Vice President, I will continue to create greater awareness of this issue and propose strategies to improve the retail practice environment.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Treasurer

Lance Berkowitz, P.D.
8910 Griffin Way
Baltimore, MD 21208

Medical College of Virginia
Graduation Year: 1965
Practice: National Pharmacy Manager
Employer: Ferring Pharmaceuticals, Inc.

As a pharmacist, journalist and community activist, I have appeared on local and national radio and television commenting on health and education. I served during the Governor William Donald Schaefer administration as a member of the Maryland Board for Community Colleges where I helped govern a program with a $100 million budget and 78,000 students. I am past chairman of the board of the Harford Belair Mental Health Association, and I am past president of the Baltimore Metropolitan Pharmacists Association. I served on the executive committee of the Archdiocese of Baltimore's Tricentennial Benefit Concert, raising over $100,000 for Maryland's needy and I served as fund raising chairman of St. Dominick's School in Hamilton where I completed a $200,000 fund raising commitment. I was also one of the founders of the Harvest for Health, a nationwide program to collect and distribute thousands of pounds of health care products for the needy. In October 1995, I was selected as the 1995 recipient of the U.S. Pharmacist/Searle Service to the Community Award, the national award given to an individual pharmacist who has distinguished him or herself in the service of their community and their fellow citizens.

I will strive if re-elected treasurer, to continue to provide the association with a prudent approach to fiscal responsibility, and I will exhaust all possibilities in helping to raise additional funds to improve the Kelly Building.

Mathew Shimoda, Pharm.D.
1079 Huntfield Road
Westminster, MD 21157

University of Maryland School of Pharmacy
Graduation Year: 1984
Practice: Management/Clinical Services
Employer: NeighborCare Pharmacy

If elected to this position, my vision of pharmacy is that we as a profession must go forward with pharmaceutical care and be aware of the changes that are paramount to our profession.

I believe that our practice in pharmaceutical care will continue to grow given the correct direction.

I believe my role as Treasurer will bring forth to this organization direction that will lead us into the 21st century.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #1

Ginger Apyar, P.D.
130 Long Drive
Queenstown, MD 21658-1215

Duquesne University School of Pharmacy
Graduation Year: 1972
Practice: Retail Community Pharmacy
Employer: Rite Aid Corporation

My association with MPhA started while I was a pharmacist-in-charge for a retail chain in Ocean City. I crossed over from community pharmacy into managed care pharmacy. I was involved in formulary management at a mail-order facility then to a position in clinical operations with one of the larger pharmacy benefit management companies.

My experience in various areas of pharmacy practice will enable me to address the concerns effectively that are critical to all areas of pharmacy. The state of pharmacy is still dramatically changing. There is still time for pharmacists to be a driving force in directing the future of pharmacy. MPhA needs to be an innovator and leader in the advancement of the profession.

Time and quality issues need to be addressed. Time is needed to educate our patients to their drug therapy in relation to the particular disease state. Quality, not only in accurately dispensing a prescription, but in appropriateness of the drug product selected in order to reduce adverse drug reactions.

Whether a pharmacist received a B.S. in Pharmacy or a Pharm.D., our particular honorarium should not divide us but should compliment and strengthen our association and profession. As pharmacists, we all have clinical skills and excel in certain areas.

It would be an honor and a privilege to serve as a trustee; for advancing the expectations the members have for MPhA and the profession.

Valarie Coons, R. Ph.
CVS Regional Business Office
11729 Beltsville Drive
Beltsville, MD 20705

Ohio Northern University School of Pharmacy
Graduation Year: 1991
Practice: Management/Retail Community Pharmacy
Employer: CVS Pharmacy

I am the daughter of an independent store owner and have been in and around the community retail business for over 20 years. I also have experience in nursing home pharmacy as well as small and large chain pharmacy.

I currently hold the position of Regional Healthcare Manager and am fortunate to be part of many grass roots efforts aimed at improving our day to day practice of pharmacy, including the Technician Task Force for the Board of Pharmacy, the University of Maryland Educational Advisory Committee, and the MPhA Goals and Objectives Committee. I am also involved with MACDS and other groups who have positively impacted changes to recent Medicaid policy and who are actively working toward a pharmacy collaborative practices agreement.

There are many challenges facing us in the year ahead. With increased managed care and decreased reimbursements, we will have to work together within our association to preserve and protect our professional rights. I am committed to working on these pivotal issues that will shape our futures and the future of our practice. I ask for your support and thank you for your consideration.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #2

Tarik Ideis, P.D.
1909 Northurst Way N.
Catonsville, MD 21228

University of Maryland School of Pharmacy
Graduation Year: 1983
Practice: Management/Retail Community Pharmacy
Employer: Wal-Mart

I would like to thank the Nominating Committee for considering me for a position on the Board of Trustees. I feel I would be good because I take pride in my work and have high work ethics and standards. I always approach problems head on. I continue to enjoy the pharmacy profession and its future. With an increase in the amount of third party plans, we need to challenge them on ways we can save them money based on our broad knowledge of drug dispensing in exchange for a fair fee.

I feel that I can benefit the MPhA with my 17 years experience as a registered pharmacist in Maryland. My experience entails anywhere from a floating pharmacist to a pharmacy manager to a district manager. I always get the job done. I look forward to serving the Association.

Gary Wirth, R. Ph.
10233 Glastonbury Road
Ellicott City, MD 21042

University of Maryland School of Pharmacy
Graduation Year: 1979
Practice: Management/Retail Community Pharmacy
Employer: Giant Food, Inc.

I am employed by Giant Food, Inc. as the Assistant Director for Managed Care Programs, and have worked in this capacity for nine years. My responsibilities include negotiation and administration of third party prescription card programs sponsored by HMOs, MCOs, PBMs, insurance companies, etc. In addition to MPhA, I am a member of the Academy of Managed Care Pharmacy, the National Association of Chain Drug Stores (NACDS), the Maryland Association of Chain Drug Stores (MACDS), and the National Council for Prescription Drug Programs (NCPDP). I earned a Masters in Business Administration from Loyola in 1990.

I am particularly concerned by the workload issues and the manpower shortage faced by pharmacists today. Unless we address and resolve these problems, it will be difficult for pharmacy to successfully make the transition to pharmaceutical care. Accordingly, MPhA should:

1. Actively support solutions to the workload problems of pharmacists in Maryland.
2. Promote pharmacy as a worthwhile career to high school and college students.
3. Develop demonstration projects in Maryland for pharmaceutical care.

If elected to the Board of Trustees of MPhA, I will support these initiatives and the goals of the Association.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #3

Frank (Butch) Henderson, R.Ph.
3982 Old Federal Hill Road
Jarrettsville, MD 21084

University of Maryland School of Pharmacy
Graduation Year: 1988
Practice: Retail Community Pharmacy
Employer: Kleins Supermarket

Just starting pharmacy school, I can remember helping the pharmacy where I worked to pick out their first computer. How incredible this new addition would be to the practice. I would like to think that this was not too long ago, but we sure have moved forward. My current position as a practicing pharmacist as well as pharmacy director allows me to see first-hand the challenges facing us today. The technology that is available today is incredible and I believe that we need to make every effort to guarantee continued access to the best technology available. The current drug distribution systems will continue to be overwhelmed, and we must be prepared to allow for the most efficient, safe, and reliable mechanisms to be utilized in pharmacy. Professional associations like MPhA must make sure that legislation is supportive of these needs. I believe that we should be permitted to use ancillary personnel at our own discretion, in order to provide best for the needs of our patients, and to continue to develop pharmacy based protocols for disease state management in the community setting. I believe that we need to continue to put pressure on third party payors to provide standard identification cards, and to provide better access to formulary to prior-authorization issues. These third parties have begun, and should continue to, put this information on the internet to promote accessibility to providers, as well as patients who are just as confused as we are.

Pharmacy faces many challenges today, and having spoken my mind on a few of these, I would like to offer my support, if elected to this position, to support MPhA and the pharmacists of Maryland.

Martin L. Yankellow, P.D.
3802-D Wean Drive
Baltimore, MD 21230

University of Maryland School of Pharmacy
Graduation Year: 1973
Practice: Retail Community Pharmacy
Employer: Weis Markets

As a member of the association, I have been a delegate at numerous conventions. I am a preceptor for students at the University of Maryland School of Pharmacy. I am also active in the Non-traditional Pharm.D. Program. These activities and my practice in the community for over 26 years has afforded me the opportunity to meet other pharmacists from a variety of backgrounds. This includes the students we currently teach; and who will be the future of our profession. The exchange of ideas and opinions is very important to our growth of pharmacy. The profession of pharmacy has made many advances and recently has undergone many changes, especially in the last 2 to 3 years. The health care system continues to evolve and we need a strong association with an active membership to maintain and advance our position as pharmacists into the new millennium. I would like to take an active role in our future by being elected to a Trustee position.

Statements of the Candidates

2000 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #4

Glenn Lichtman, R.Ph.
4645 Old Court Road, Suite 208
Baltimore, MD 21208

Howard University
Graduation Year: 1980
Practice: Placement Service Owner
Employer: PharmaSTAT

Our profession is constantly changing. The practice of pharmacy as it exists today is vastly different from the profession I knew when I graduated pharmacy school 20 years ago. At that time, the largest practice settings were retail pharmacy (dominated by independent pharmacists) and hospital pharmacy. There was institutional pharmacy, but most of that aspect was being performed by the independent pharmacists in a back room. Home health pharmacy was almost unheard of, and a clinical practice setting was a dream we learned about in school.

For our association to have an impact on pharmacy in the new millennium, we must adapt to today's ever changing pharmacy environment. We must project our image as "the umbrella" organization for ALL pharmacists. Too often today, new graduates think of our association as strictly a "Retail Pharmacists Association." If I am selected to serve on the Board of Trustees, expanding our image and role in all practice settings will be my top priority.

Charles A. Sandler, P.D.
400 S. Hammonds Ferry Road
Linthicum, MD 21090

University of Maryland School of Pharmacy
Graduation Year: 1962
Practice: Independent Community Pharmacy
Employer: Linthicum Pharmacy

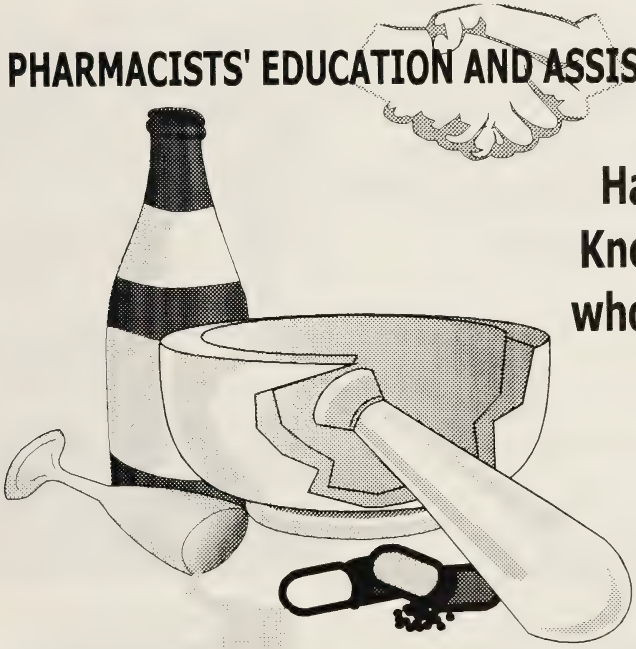
I am past president of the School of Pharmacy Alumni Association and have served on its executive board since 1970. I am a member and past president of the AZO fraternity and have served on its executive board. I was a member of the executive board of BMPA until its merger with MPhA and am now a member of the Baltimore Advisory Committee. I am also enrolled in the Pharm.D program at the University of Maryland.

While pharmacy is a profession, and we are concerned about delivering pharmaceutical care to our patients, we must also be concerned with the business side of pharmacy. Until we get paid for our knowledge in delivering services, we must be reimbursed at a reasonable fee for dispensing.

Evidence-Based Medicine
Clinical Guidelines for Health Care Providers

By Robin Garner Smith, Pharm.D. Candidate
School of Pharmacy, University of Maryland

As health care providers, pharmacists are expected to keep abreast of the current standards of care for a very wide variety of disease states. This is a task that is much easier said then done given the pace at which medical advances are made. And as we all know, pharmacists do not have an overabundance of free time to spend reading journals and researching articles but there is hope. If you have internet access at work or home, over 600 clinical guidelines are available free of charge at the click of a mouse button. The National Guideline Clearinghouse is a web site sponsored by the Agency for Health Care Policy and Research (AHCPR), the American Medical Association (AMA), and the American Association of Health Plans (AAHP). The site summarizes guideline recommendations, source, and release date. An electronic link to the full guideline and a print reference are also listed if available. Recommendations which can be found on the site include the *Sixth Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure* and the *Summary of the Second Report of the National Cholesterol Education Program Expert Panel on Detection Evaluation, and Treatment of High Blood Cholesterol.* Please visit the National Guideline Clearinghouse web site at http://www.guideline.gov for more information.



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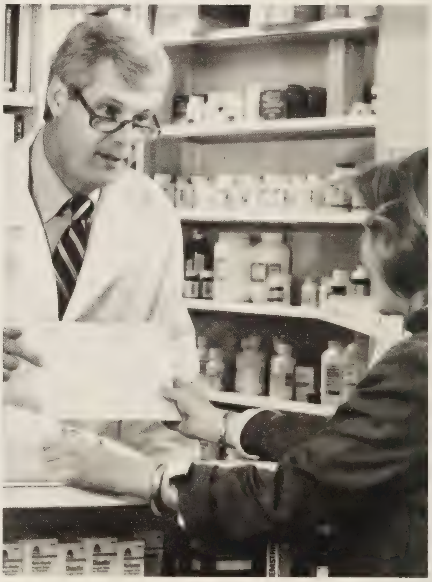

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2000 Maryland Leadership Elections Official Ballot

Please select the candidate you believe will best fulfill the duties of the office by checking the box appearing beside their name.

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☐ Joseph Marrocco, P.D.

☐ Mark R. Sanford, P.D., M.B.A.

Vice-President

☐ Paul Holly, P.D.

☐ Kevin McCarthy, R.Ph.

Treasurer

☐ Lance Berkowitz, P.D.

☐ Mathew Shimoda, Pharm.D.

Please select the candidate you believe will best represent you as a member on the Board of Trustees by checking the box appearing beside their name.

Maryland Pharmacists Association Board of Trustees

Trustee Seat # 1

☐ Ginger Apyar, P.D.

☐ Valarie, Coons, R. Ph.

Trustee Seat # 2

☐ Tarik Ideis, P.D.

☐ Gary Wirth, R.Ph.

Trustee Seat # 3

☐ Frank (Butch) Henderson, R.Ph.

☐ Martin L. Yankellow, P.D.

Trustee Seat # 4

☐ Glenn Lichtman, R. Ph.

☐ Charles A. Sandler, P.D.

When completed, seal and return your self-mail ballot to the Maryland Pharmacists Association, ***postmarked by Friday, April 28, 2000***. For questions, please call MPhA at 800-833-7587.

Fold

2000 Maryland Leadership Elections
Maryland Pharmacists Association
650 W. Lombard Street
Baltimore, MD 21201-1572

Fold

Pharmacy Through The Ages

Notable Pharmacists: Pilatre de Rozier

The world's first aeronaut was a pharmacist.

Jean Francois Pilatre de Rozier was born in Metz, France, on March 30, 1754, the fourth child of an innkeeper. He entered the Royal College of St. Louis at the age of 11, and began his career at the age of 17, working in a Parisian hospital. He moved back to Metz in 1772, where he apprenticed as a pharmacist while studying natural science. He returned to Paris in 1777, where he completed his pharmacy apprenticeship.

Rozier became fascinated with the writings of Benjamin Franklin, and he presented lectures describing Franklin's experiments with electricity. These lectures led to his appointment as curator of the natural history collections of King Louis XVI. Here Rozier met Joseph and Etienne Montgolfier, who were experimenting with hot air balloons.

After a successful balloon assent by the Montgolfier brothers in Paris in September 1783—with a sheep, a rooster, and a duck as passengers—the stage was set for humankind's first venture into the atmosphere. Initially, two convicts under death sentence were to make the flight, but Pilatre de Rozier protested that criminals should not be given such a rare privilege. The King agreed, and on October 15, 1783, tethered to the ground by 100 feet of rope, Pilatre de Rozier became the first human to experience aerial flight.

One month later Rozier and co-pilot Marquis d' Arlandes made the first free aerial voyage in history, crossing the Seine at an altitude of 3,000 feet, with Ben Franklin as a witness. After several more spectacular flights, Rozier was offered 40,000 francs if he would undertake a balloon flight from France to England. He engaged French chemist Pierre Ange Romain to construct a new type of hot air balloon suspended from a hydrogen balloon for added bounce in the English Channel crossing.

On June 15, 1785, Rozier and Romain ascended in the *Royal Balloon*. As they rose to 3,000 feet, a spark from the hot air balloon ignited the hydrogen balloon. Both passengers perished when the apparatus collapsed and fell to the rocks below. The first human fatalities of aerial flight were buried in unmarked graves in the parish cemetery at Ville de Wimille, France.

Others of our profession contributing to aerial flight include German pharmacist Martin Heinrich Klaproth (1743-1817), who made the first balloon flight to study the physical phenomena connected with aeronautics, and Dutch pharmacist Jean Pierre Minckelers (1748-1824), who was the first to replace both hot air and hydrogen in balloons with illuminating gas.

George Griffenhagen,
Pharmacist, Vienna, Va.

Article reprinted courtesy of JAPhA July/August 1999 39:4:544

Recognizing Pharmacy Excellence
The 2000 MPhA Awards

Each year, the Maryland Pharmacists Association recognizes professional excellence through a series of awards. To nominate a pharmacist for one of the awards described below, complete the Official Award Nomination Form. The forms should be submitted to: Award Nominations, c/o Maryland Pharmacists Association, 650 West Lombard Street, Baltimore, Maryland 21201-1572.

All nominations will be reviewed by the Past Presidents Council who is responsible for selecting the award recipients. The decision of the Council is final. Award recipients will be notified in advance of the award's presentation at the 118th Annual MPhA Convention.

For consideration, all nominations must be received no later than ***Friday, April 14, 2000.***

- **Pharmacists Mutual Distinguished Young Pharmacist Award**
  Awarded to a pharmacist who graduated within the past ten years and has made a significant contribution to the profession through service to a local, state or national pharmacy organization. ***Who is Eligible:*** Any MPhA pharmacist member who graduated from pharmacy school in 1991 or after.

- **Maryland Pharmacists Association Honorary President**
  An honorary position on the Board of Trustees given to a person, not necessarily a pharmacist, who has worked for the MPhA or Maryland Pharmacy over a long period of time. ***Who is Eligible:*** Any long standing contributor to the profession or the Association.

- **Seidman Distinguished Achievement Award**
  Created to honor the major impact on the pharmacy profession by Henry Seidman, this award is presented for outstanding service by a Maryland pharmacist to the pharmacy profession during ***either*** the past year or over a period of years. ***Who is Eligible:*** Any MPhA pharmacist member who meets the criteria of the award.

- **Wyeth-Ayerst Bowl of Hygeia Award**
  The Bowl of Hygeia recognizes a pharmacist who has performed outstanding services to the community in any area, with a particular emphasis on non-pharmacy contributions. ***Who is Eligible:*** Any MPhA member pharmacist who has not already received the Bowl of Hygeia.

- **DuPont Innovative Practice Award**
  Established in 1993, this award aims to recognize forward-thinking pharmacists who have expanded their practices into new areas. This may include adding a new service, restructuring a pharmacy and its current services, or developing a completely new practice. ***Who is Eligible:*** Any MPhA pharmacist member who meets the criteria of the award.

Maryland Pharmacists Association
Award Nomination Form

To nominate a Maryland pharmacist for one of MPhA's annual "Recognizing Pharmacy Excellence" awards, this form must be complete and returned to the Maryland Pharmacists Association no later than ***Friday, April 14, 2000***. All nominations will be held in strictest confidence by the MPhA Past Presidents Council, which is responsible for selecting the award recipients. The decision of the Council is final. Award recipients will be notified in advance of the presentation of the award.

Please consider the following nominee for:

☐ ***Pharmacist Mutual Distinguished Young Pharmacist Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Seidman Distinguished Achievement Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Dupont Innovative Practice Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Wyeth-Ayerst Bowl of Hygeia***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***MPhA Honorary President***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

Attach a current resume or curriculum vitae for the nominee that shows their professional and personal achievements. This information is essential for the Past Presidents Council to make its decisions as to which candidates will be recipients of the "Recognizing Pharmacy Excellence" awards. In addition, the nominator should attach a brief letter explaining why the nominee is worthy of receiving this award.

Return the completed form to:

Awards Nominations
c/o Maryland Pharmacists Association
650 W. Lombard Street, Baltimore, MD 21201-1572

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Awards Nominations
Maryland Pharmacists Association
650 W. Lombard Street
Baltimore, MD 21201-1572

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USP Responds to FDA Dietary Supplement Strategy

Compiled by Robin Garner Smith, Pharm.D. Candidate
School of Pharmacy, University of Maryland

The USP (U.S. Pharmacopeia) has responded to the Food and Drug Administration's (FDA) request for information developing an overall strategy to achieve effective regulation of dietary supplements. Commenting at FDA's Open Meeting, Joseph G. Valentino, J.D., USP's general counsel and senior vice president stated, "FDA's overall strategy should ensure the identity, safety, purity, and quality of dietary supplements. This strategy also should ensure consistency and uniformity of product strength and identity, so that consumers can make informed selections among dietary supplements."

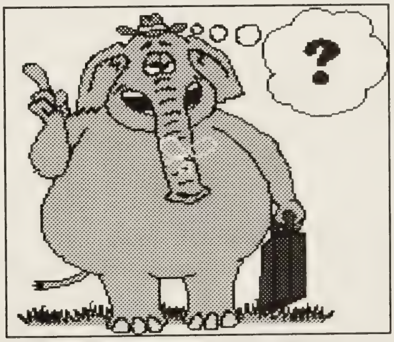
Based upon concerns about the quality of dietary supplements, USP has set standards for these products and has developed information on standards. In its comments, USP encouraged the FDA to:

- work with USP to develop standards for botanical and non-botanical dietary supplement products;
- encourage the industry to use these standards, and incorporate them into FDA regulations;
- encourage *U.S. Pharmacopeia* (USP) standards and *National Formulary* (NF) standards to ensure the purity, potency, quality, and most important, the safety of dietary supplements;
- carefully review product labeling to ensure that labels accurately state compliance with *USP* or *NF* standards and do not contain false, meaningless, or misleading statements.

A dietary supplement, as defined by the Dietary Supplement Health and Education Act of 1994, is a product intended to supplement the diet. It contains one or more vitamin, mineral, herb/botanical, and/or amino acid ingredients. Currently dietary supplements are regulated as foods by the FDA. The USP, which sets standards for drug products, also establishes standards for individual and combination vitamin and mineral nutritional supplements. "*USP*" or "*NF*" on a product label informs consumers that the manufacturer is meeting quality standards that have been established by an authoritative, credible and federally-recognized standards-setting organization.

The "*USP*" designation on a dietary supplement label indicates that the product meets standards for identity, strength, quality, purity, packaging, and labeling. The "*USP*" designation may appear if it has a FDA-approved or USP-accepted use. Manufacturers may voluntarily apply the "*NF*" designation indicating that the product is in compliance with public standards in the *National Formulary*. The article may appear in the *National Formulary* if it has no FDA-approved or USP-accepted use but has been used extensively without a significant safety risk. Consumers should not be misled by statements such as "*meets laboratory standards for quality*."

Please visit the USP web site, www.usp.org, for the official press releases.



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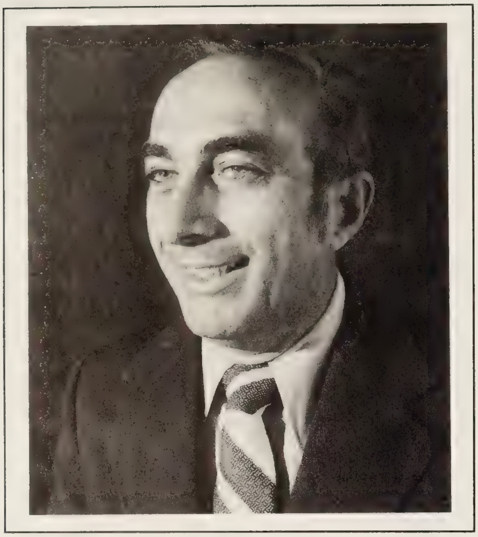
Everyone Knew Leon



In pharmacies throughout Maryland, Leon Weiner (B.S. '58) was a familiar face as a state drug inspector for the Division of Drug Control. Though not in the most traditional role for a pharmacist, pharmacy was certainly a tradition for the Weiner family. Both his brother, William, and his late brother, Alex, were pharmacists and Maryland graduates. For Leon, the third son of Abraham and Sarah Weiner, that pharmacy tradition had been rich and varied.

A native Baltimorean, Leon graduated from Patterson Park High School in February 1948. He then worked for the Social Security Administration until 1951 when he was drafted. After his two-year hitch in the U.S. Army in Wisconsin and Kansas, Leon returned to Baltimore and the Social Security Administration. In 1953 his evenings were spent in night school at the University of Baltimore under the G.I. Bill of Rights. From 1954-58, Leon attended the University of Maryland School of Pharmacy. While a student, he worked part-time for Read's Drug Store. After graduating and passing the state boards, he went to work full-time for Read's.

In January 1964, Leon became a drug inspector for the Division of Drug Control, a position which he held for over 30 years. Leon enjoyed his work which allowed him to meet and talk with pharmacists throughout the area as well as having a great deal of interaction with members of the Maryland Board of Pharmacy, the Medical and Dental Boards, the FDA, the state and local police, and the FBI.

His commitment to pharmacy and the School of Pharmacy didn't end with graduation. Leon was a member of the Alumni Association and served as its president in 1975-76. In keeping with the Weiner pharmacy tradition, his brother William served as Alumni Association president in 1977. Leon's contribution to the school included gathering and writing the Alumni News column in the *Rx* newsletter as well as serving on the Alumni Association board of directors.

Leon was married to the former Thelma Epstein and had two sons, Michael Lee and Alan David.

Everyone who knew Leon agrees he was a happy, friendly and outgoing person. But, most of all they knew that Leon was a pharmacist and proud of it.

by Jacquie Lucy

A version of this Aluminus Profile was originally printed in the Rx newsletter.

Editors note:
The Maryland Pharmacists Association would like to express its deepest sympathy in the passing of Leon Weiner.

Maximize Your Tax Savings with Charitable Giving

by Patrick M. Mullen

Did you know that charitable gifts may help you save on taxes in multiple ways? Donations may be income tax-deductible; and with proper strategy, you may be able to reduce capital gains taxes as well.

If you were thinking of locking in some of your capital gains this year, consider the more tax-efficient alternative. Donate shares of appreciated stock, mutual funds or stock to charity instead of writing a check. You may be able to deduct the current market value of the gift for income tax purposes (subject to limitations covered below) just as if you had made a cash payment. As an added advantage, you will escape any capital gains taxes you would have owed if you had sold the assets instead, assuming you held the assets for more than one year and made the gifts to qualified charities. Consequently, the after tax cost of making your charitable gift will be less with a gift of appreciated property than with cash.

SOME ADDITIONAL POINTS WORTH NOTING

- The deduction for a gift of assets owned for less than one year is the lower of adjusted cost or market value.
- Donors subject to Alternative Minimum Tax (AMT) may claim the same contribution deductions; contributions of appreciated property are not treated as a tax preference item for AMT purpose.
- Contributions of appreciated, publicly-traded stock to private (non-operating) foundations are deductible at full fair market value. All other gifts of property, closely held stock and real estate, for example, are deductible at cost basis.
- Never gift assets held at a loss. Sell the asset, realize the loss on your tax return, and write a check to the charity.

The transfer of ownership to a charity is easy. Simply ask your financial institution to transfer the assets to an account in the name of a charity. Of course, to be effective for income tax deduction purposes, the transfer will need to be made before the year-end.

What if you still like all of the appreciated investments in your portfolio? Instead of sending, say, $1,000 to a charity and keeping all your appreciated stock, consider gifting $1,000 worth of stock and using the $1,000 in cash to buy new shares. You could continue your investment in the stock, but have a higher tax cost basis than your original stock, which may reduce the capital gain whenever you ultimately do decide to sell.

Say you are giving only part of a particular holding away. If you bought shares at different prices, you can maximize your tax savings by gifting the lot with the lowest cost basis. However, if you have ever applied the average-cost method to calculating gains on sales of mutual fund shares that you are gifting, you must continue to use that approach. If you do not specify which shares to give, the IRS assumes that you gifted the shares that you owned the longest.

Keep a step ahead of the capital gains distributions on your mutual funds. Mutual funds are required to distribute, at least annually, the net long-term profits realized on the sale of securities held in the portfolio. The net asset value is adjusted, and shareholders are liable for long-term capital gains taxes on all their shares, regardless of how long they were held. Many equity-oriented mutual funds distribute substantial long-term capital gains to shareholders in the last months of the year. To avoid the capital gains taxes owed, time your mutual fund gifts to beat these year-end distributions.

There is a provision in the tax law that limits the total charitable contributions you may claim in a tax year. You may deduct gifts to public charities up to 50% of your "contribution base"—generally your adjusted gross income—if made in cash, and up to 30% if made in appreciated property. Cash gifts to private foundations, such as family foundations, are deductible up to a limit of 30% of your contribution base and gifts of appreciated property up to 20%. To the extent an allowable deduction is not fully used in the year you make the gift, due to limitations based on your adjusted gross income, you may carry forward the deduction for up to five succeeding years.

Patrick Mullen is a financial consultant with Salomon Smith Barney in Montgomery, Alabama.

Dr. Seuss on Pharmacy...

Oh The Things You Can Fill

Oh the things you can fill
for the folks who are ill.
With your bright shiny spatula
Oh, what a thrill!

Besmocked and bedecked out
in Pharmacist clothes
knowing all of the things
that a Pharmacist knows.

You're quick and efficient,
you're sharp and inventive.
It also just happens
you're anal retentive.

You read slips of paper
to get the specifics
from doctors who scribble out
strange hieroglyphics.

Could it be Celebrex
or maybe Celexa?
It might be a Z-Pack
then it might be Zyprexa.

And you bill by computer
AWP minus 15 percent
plus a buck twenty-three.

You fill and you bill
and you feel so dejected
'cause half of your claims
are being rejected.

So you pick up the phone
while computerized voices
keep you waiting forever
explaining the choices.

Press 1 for directions
or maybe it's 2.
Push "pound" for a message.
It sucks to be you.

Then you pour out the pills
on your pill counting tray
and you count, and you count
and you count pills all day.

You count them by fives
to the rhythm and beat
of the songs that you learned
on Sesame Street.

And the customers gripe
and complain while you're fillin'
could it be the whole world is
on "Grouchacillin?"

My pills are too big
and my co-pay's too high!
Take it four times a day?
I cannot comply!

Then you scarf down your
sandwich in one single bite
which if done in a restaurant
would be impolite.

But a Doc's on line one
Mrs. Jones on line two
she has 500 pills
will you cut them in two?

And the drug reps, they tap
on your counter, tap, tap—
to give you their spiel
plus a load of free crap!

There's pens and there's post-its
there's free stuff galore.
But the really cool clock's
for the doc who's next door.

Then ol' Mrs. Snifflemore
gives you that smile
and you know once again
that it's almost worthwhile.

So you hang up your smock
and put down your free pen.
Tomorrow you'll do it
all over again.

Oh the things you will fill for
the folks who are ill.
With your bright shiny spatula
Oh, what a thrill!

Editors Note: This was sent to us by a member of the association, but the author is unknown.

Standardized Prescription Cards
Coming to your Pharmacy Soon?

Compiled by Robin Garner Smith, Pharm.D. Candidate
School of Pharmacy, University of Maryland

Your customer waits impatiently at the counter wondering why it has taken twenty minutes to stick a label on a box. Meanwhile, you have been on hold with her benefit administrator for at least fifteen minutes while the recording on the line thanks you for your patience but continues to tie up your pharmacy's phone line. After holding for a half an hour you are told that you must add a nine to the end of the group number. You thank the gentleman for his help, add the nine to the group number, resubmit the claim, get confirmation of payment, ring the customer out and attempt to counsel her on proper meter dose inhaler technique. The customer states that she needs to get to her next appointment and does not have time to listen to your directions.

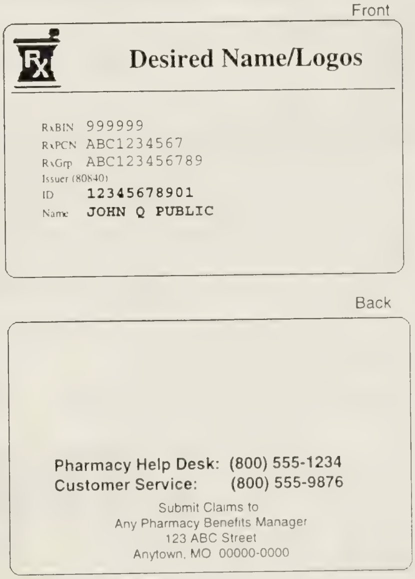
Does this sound too familiar to you? Scenarios like the above are a major inhibitor to the ability of pharmacists to perform pharmaceutical care and patient counseling. Thus, a nationwide movement has begun to institute a standardized prescription card. The most desirable method of instituting a universal card would be by federal legislation which mandates implementation of a national prescription card format. This would prevent the institution of fifty different cards. Pharmacy associations and legislators in several states, not seeing such a national bill in the near future, have pursued local legislation. Two states, Texas and North Carolina, have passed standardized prescription card laws to date and several other states, including Mississippi, Georgia, and Maryland, are pursuing bills during the upcoming legislative sessions.

The National Council on Prescription Drug Programs (NCPDP) has developed a voluntary national standard for prescription cards upon which both Texas and North Carolina modeled their bills. This standard format was developed to aid in the implementation of one universal card which includes elements necessary for processing electronic claims. The standard format is shown in figure 1. It was compiled by combining information gathered from the NCPDP membership, the American Pharmaceutical Association, and from the National Association for Chain Drug Stores. The model card includes a minimum of the following information in specified placement on the card:

- *the health benefit administrator's name and/or logo*
- *complete electronic transaction routing information* with a minimum of the International Identification Number as assigned by the American National Standards Institute. The Processor Control Number and insured's Group Number are also included if required for prescription claim processing.
- *insured's identification number*
- *insured's name*
- *name and address of the health benefit administrator* where non-electronic prescription claims or other correspondence can be sent
- *telephone number to the health benefit administrator's help desk* which can be called for assistance

Figure 1

Sample Card:



Front

Desired Name/Logos

RxBIN 999999
RxPCN ABC1234567
RxGrp ABC123456789
Issuer (80840)
ID 12345678901
Name JOHN Q PUBLIC

Back

Pharmacy Help Desk: (800) 555-1234
Customer Service: (800) 555-9876

Submit Claims to
Any Pharmacy Benefits Manager
123 ABC Street
Anytown, MO 00000-0000

Optional elements for the model card include date(s) of birth, dependent information, copayment information, effective date of benefits, expiration date of benefits, and a magnetic strip.

The Texas Senate Bill 1237 was backed by the Texas Pharmacy Association, the Texas Federation of Drug Stores, and the Texas Society of Health-System Pharmacists. It was the first universal prescription card legislation passed. The bill incorporated the NCPDP model guidelines. In addition, cards are required to include a benefit effective date and copayment information. The bill was signed by Governor George W. Bush and became effective on September 1, 1999.

North Carolina passed the second such law entitled Senate Bill 513. The bill was backed by the North Carolina Association of Pharmacists and the North Carolina Retail Merchants Association. It was signed by Governor James Hunt on September 15, 1999. The card was also modeled from the NCPDP standards with the additional requirement that all cards implement an electronically readable medium on the card by the year 2003. Options for this medium include a magnetic strip, bar code, or any new technology available that is capable of processing a claim by electronic verification.

Maryland's proposed bill also follows the NCPDP model. The bill is sponsored by Delegate Donald B. Elliott, a pharmacist from District 4B. In addition to the NCPDP required elements, the bill allows for any of following items to be listed on the card if they are necessary for processing the claim: date of birth, dependent information, and copayment information. If passed, the law will take effect October 1, 2000.

Copy of NCPDP sample card used with permission.

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Continuing Education for Pharmacists

Volume XVII, No. 2

Patient Counseling: Prostate Cancer; Part 2: Detection and Treatment

Thomas A. Gossel, R.Ph., Ph.D.,
Dean, and Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals. The goals of this lesson series are to discuss prostate cancer and present information useful in counseling patients on the disease.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. identify probable causes including risk factors, pathogenesis, prognosis and symptoms of prostate cancer;
2. exhibit knowledge of drug and non-drug treatment options, and methods to control symptoms of prostate cancer; and,
3. show an understanding of the pharmacologic actions and adverse effects associated with drugs used to treat prostate cancer.

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Overview

Prostate cancer is an important public health problem in the U.S. It is the most commonly diagnosed cancer in males in this country, and the second leading cause of cancer death in males. It accounts for more than 13 percent of all cancer deaths and more than 28 percent of all cancers in men in the U.S., claiming an estimated 39,200 lives in 1998. Only lung cancer has a higher mortality rate. It is more common in black males than white males, with 22 deaths per 100,000 and 14 deaths per 100,000, respectively.

Prostate cancer is increasing in incidence. The advent of improved screening procedures such as the prostate-specific antigen blood test and growing public awareness have raised questions concerning the cause(s) of prostate cancer as well as methods to screen for and prevent this disease.

Detection

Rectal examination is usually the first step, and an extremely important means to screen for prostate cancer. Because the gland is located within a finger's length of the rectum, abnormalities in its size or texture may be detected. A physician will insert a finger into the rectum and palpate the gland (i.e., feel it lightly with the fingertip) through the rectal wall. Abnormal glands will typically be felt as an area of induration (denseness or hardened tissue).

Diagnosis of suspected tumors is then confirmed by biopsy and microscopic examination of tissue. The extent of spread can be assessed with computed tomography (CT) scans, bone scans, intravenous urograms, magnetic resonance imaging (MRI), lymphangiography, ultrasound, and other means.

Digital examination may not detect tumors in their early stages of disease. Therefore, other more sensitive means for detection, especially of tumors in their microscopic stage of development, are necessary.

Prostate-specific Antigen. Prostate-specific antigen (PSA) is the most sensitive and clinically useful marker for the early detection and staging of prostate cancer. It is extremely useful in evaluating the response to therapy, having generally replaced prostatic acid phosphatase (PAP) and bone scans, earlier evaluation tools, for monitoring a patient's condition after treatment.

PSA is a glycoprotein consisting of 237 amino acids. It is produced only by the epithelial cells which line the prostate gland. Since this antigen will be found in both normal and neoplastic epithelium, PSA can be considered as a differentiation substance rather than a tumor-specific one. Serum levels are expected to be increased naturally after the prostate is damaged by

Table 1
Age-Specific Reference Ranges for Prostate-Specific Antigen (PSA)

Age (years)	PSA Range in Healthy Males (ng/mL)
40-49	0-2.5
50-59	0-3.5
60-69	0-4.5
70-79	0-6.5

trauma or disease.

Therefore, PSA is not a perfect marker for prostate cancer. Moreover, approximately one-third of patients with prostate cancer are reported to have normal PSA levels. Serum concentrations may also increase after vigorous prostatic manipulation such as biopsy.

PSA is also not specific for cancer, as it can be elevated with other prostate pathologies, including benign prostatic hyperplasia (BPH) and prostatitis. It is reported that more than one-half of males with elevated PSA levels are cancer-free. In addition, normal physiologic variation can be as high as 30 percent for the same patient retested two to three weeks later. Routine digital rectal examination does not cause clinically significant increases in serum PSA concentrations. Even with its limitations, PSA measurements are still the best predictor for prostate cancer.

The conventional reference range for serum PSA is 0 to 4 ng/mL (ng = nanogram = 10^{-9} M). Because serum PSA increases naturally with the patient's age, the age-specific ranges shown in Table 1 may be more appropriate for analysis. Some clinicians recommend using age-specific reference ranges only for patients 40 to 59 years of age, and the conventional reference range for men age 60 and older. Certain factors may be responsible for the increase in serum PSA with advancing age. These include an increase in prostate size (volume; mass), increased inflammation, and the presence of cancer that cannot be detected by currently available diagnostic methods.

The variation in serum PSA concentrations between two consecutive determinations will attract the attention of the watchful physician. The rate of change from one year to another is termed the PSA *velocity*. This value can help in the diagnosis of prostate cancer regardless of whether the raw score is normal or elevated. There is a consensus that increases greater than 0.75 ng/mL per year may warrant a biopsy, regardless of the absolute PSA value.

Treatment of Prostate Cancer

The treatment of prostate cancer is influenced by the stage of the disease, patient age and physical condition, and response to previous therapy. Therapeutic options include no treatment, hormonal therapy, orchiectomy, chemotherapy, radiation, surgery (radical prostatectomy), extended radical prostatectomy, or pelvic exenteration (removal of all organs from within the pelvic cavity), or any combination of these. Surgery or radiation therapy may be considered for patients with stage A or B disease. Hormonal therapy is traditionally considered for patients with C or D stage disease.

Physicians may elect to initiate treatment with hormone therapy in patients with early stages of disease. Despite advances in diagnosis and therapy of prostate cancer, the number of deaths from this disease continues to increase each year.

The normal etiology of prostate cancer is to progress slowly and metastasize over time. The primary considerations to initiating treatment are based on expectations of whether or not a patient will develop symptoms, and whether or not the cancer will shorten his life. The critical factor is to treat the tumors for which *cure is necessary* and not treat tumors which do not need it. In other words, treating an asymptomatic man, aged 80 years, who has a small, localized tumor, while withholding treatment in a healthy 40-year-old man may be inappropriate. When a tumor has metastasized, focus of therapy changes from achieving a cure to prolonging life and relieving symptoms.

Watchful Waiting (Deferred Therapy). Most prostate cancers are slow growing. Therefore, a period of *watchful waiting* without therapy is the treatment policy for males with a life expectancy of 10 years or less. This is based on all other considerations including age, overall health, occupation, etc. Treatment is initiated when the patient becomes symptomatic. For younger, otherwise healthy men and those with fast growing tumors, a more aggressive approach to treatment may be necessary.

Patients treated in this manner do not need to be concerned about making a decision on whether the trade-off in possibly extending life expectancy outweighs living with one or more potential complications of treatment. The decision to move forward with therapy becomes more difficult when data are considered which show that life expectancy in males over 65 years of age is increased when they are treated with surgery or radiation.

Surgery. Radical prostatectomy, removal of the entire prostate gland and both seminal vesicles, dates back to the late1800s. It is the most effective treatment to cure pathologically localized prostate cancer. The overall cure rate, identified as having undetectable serum PSA concentrations, is reported by one source to be nearly 70 percent.

Complications to surgery include urinary incontinence and impotence. With excellent surgical techniques, the risk of significant urinary incontinence may be reduced to less than 5 percent. Preservation of potency may be achieved in more than 70 percent of patients.

Radiotherapy. Radiation therapy was introduced in the 1950s as a potentially curative modality for localized prostate cancer. It can be administered via an external beam or via interstitial radioactive seeds that are implanted surgically within the prostate gland. This later process is termed brachytherapy.

Radiotherapy may be most appropriate for patients with localized disease who are unable or unwilling to undergo radical prostatectomy. Radiation therapy alone, or in combination with hormonal therapy, is the treatment of choice for tumors that have extended beyond the borders of the prostate gland. Radiation is reported to be effective in controlling up to 65 percent of localized tumors. The odds for success decline significantly once the tumor has spread beyond the prostate gland.

Cryosurgery. Cryosurgery involves freezing tumor cells to induce cellular necrosis (death). Cryogenic probes are inserted through the urethra and the intraglandular temperature is lowered to near minus 40°C.

Most patients are discharged within 24 hours without serious adverse effects. Troublesome complications include urinary retention, impotence, and perineal pain.

Drug Therapy. The mainstay of therapy for patients with advanced disease is to reduce the level of circulating androgens. Since prostate cancer cells are dependent on androgens for their sustenance, deprivation of testosterone can induce regression of both primary and metastatic lesions.

Endocrine drug products are summarized in Table 2. They appear to be as effective as orchiectomy (excision of one or both testes; castration). The drugs, in general, appear to offer palliative relief of symptoms, but minimal advantage to survival. Because prostate cancer is composed of a heterogeneous cell population, relapse following hormone therapy may occur due to continued growth of hormone-insensitive cells.

Dihydrotestosterone (DHT) is the principle hormone that regulates growth of prostatic tissue. Approximately 95 percent of testosterone is synthesized in the testes, with the remaining 5 percent produced by the adrenal glands. Synthesis is controlled directly by secretion of gonadotropin-releasing hormone (GnRH), more commonly referred to as luteinizing hormone-releasing-hormone (LHRH). It is a product of the hypothalamus. LHRH signals the pituitary gland to release luteinizing hormone (LH) which, in turn, circulates to and binds with specific membrane receptors on the Leydig cells of the testes. There, it increases steroidogenesis (synthesis) and secretion of androgens such as testosterone. Testosterone is metabolized into DHT, its active form. In the prostate gland, this conversion is catalyzed by the enzyme 5-alpha-reductase in glandular epithelial cells.

Table 2
Hormonal Therapy for Treatment of Prostate Cancer

Hormone	Generic Name	Trade Name
estrogen	diethylstilbestrol (DES)	Stilbestrol
	diethylstilbestrol diphosphate	Stilphostrol
	estramustine phosphate sodium	Emcyt
LHRH analogs	leuprolide	Lupron
	goserelin	Zoladex
antiandrogens	flutamide	Eulexin
	bicalutamide	Casodex
	nilutamide	Nilandron

The goal of hormonal therapy is to stabilize disease progression or, ideally, promote regression if possible. This can be achieved when testosterone levels are reduced to castration levels (<50 ng/mL). Onset of significant therapeutic drug action may require about two weeks.

Once hormonal therapy is initiated, life expectancy varies considerably. Survival rates reported in one source are: 10 percent of patients live less than six months, 50 percent live less than three years, and 10 percent survive longer than 10 years.

Timing of initiation of therapy varies widely in clinical practice. Timing of initiation appears to make little difference in the outcome of the disease in many studies. Other investigations have suggested that initiating therapy early in the disease process can prolong overall survival. Beginning drug treatment at the time of diagnosis may delay onset of symptoms. It will probably not lengthen the patient's life span once relapse has occurred. Thus, some physicians may wish to delay initiation of hormonal therapy until after symptoms appear.

Estrogens

Estrogens (e.g., diethylstilbestrol; DES) were introduced into therapy for prostate cancer as a substitute for orchiectomy in the 1940s. The primary effect of estrogens appears to be through suppression of LHRH secretion from the hypothalamus. This, in turn, regulates luteinizing hormone (LH) and follicle-stimulating hormone (FSH) release from the pituitary. In males, LH stimulates the Leydig cells to produce testosterone. FSH acts on Sertoli cells within the testicular tubules to enhance the synthesis of androgen-binding protein.

Adverse effects, most specifically gynecomastia (enlarged, painful breasts in males) and the development of cardiovascular complications, as well as the discovery of LHRH analogs have curtailed the use of DES for treating advanced prostate cancer. The use of estrogen therapy is limited today.

Gonadotropin-Releasing Hormone Analogs

Referred to as LHRH analogs, these drugs reduce testosterone synthesis by inhibiting the release of gonadotropins from the pituitary. This is achieved by a down-regulation of receptors (i.e., action upon cellular receptors to cause a reduced response to subsequent doses of the specific agonist) which follows an initial rise in both LH and FSH. They are used alone or in combination with antiandrogens that block testosterone action in the prostate itself. The extent of antitumor action is reported to be equivalent to surgical castration.

The initial increase in LH concentration results in an immediate rise of testosterone levels. This can lead to worsening of symptoms, and patients should be advised of this possibility. Caution is urged when using these agents in patients with urinary obstruction, symptomatic bone lesions including pain, or impending spinal cord compromise. This flare of activity may be lessened or eliminated by administering an antiandrogen concurrently.

Antiandrogens

Because of the limitations of other hormonal drugs, a newer therapeutic group referred to as antiandrogens has been developed. These drugs produce total androgen blockade by eliminating both testicular and adrenal testosterone.

Antiandrogen agents antagonize the action of DHT at its target tissue by competing for its binding sites on cellular androgen receptors.

They stimulate the hypothalamus to increase LH levels. The increase in serum concentrations of both testosterone and DHT has the advantage that, when they are used alone, potency is maintained. This is one of the primary considerations many men consider to be extremely important when treatment options are discussed.

Three LHRH analogs are approved currently for treating advanced prostate cancer: bicalutamide (Casodex), flutamide (Eulexin), and nilutamide (Nilandron). Bicalutamide and flutamide are indicated for use in combination with LHRH analogs. Nilutamide is indicated for use in combination with surgical castration.

Adverse effects such as nausea, diarrhea, fatigue, and gynecomastia are common and can be bothersome. The incidence and severity of hot flashes and muscle wasting, effects common with treatments that lower serum testosterone levels, are reduced.

Other Potential Drug Therapy

Finasteride (Proscar) is approved for treatment of benign prostatic hyperplasia (BPH). Because it inhibits the enzyme 5-alpha-reductase, it inhibits conversion of testosterone to DHT. Studies are underway to investigate its potential for treatment of prostate cancer.

Testosterone suppression to castration levels may be achieved with ketoconazole. In one study, the effective daily dose was 1200 mg, six times the antifungal dose. Ketoconazole interferes with the cytochrome P450-dependent mixed-function oxidase system. Two enzymes, the 17-hydroxylase and the C17-20 lyase, are integral to testosterone biosynthesis in both the adrenals and testes. The drug's use in chemical castration is experimental at this time.

Cytotoxic Agents. Chemotherapy of carcinoma of the prostate using cytotoxic agents has been somewhat discouraging to date. These drugs play a relatively minor role in prostate cancer and their use is not encouraged. A primary goal of therapy is to develop new drugs that will control growth of hormone-resistant cell populations effectively. Discovery of effective drugs with this action will represent a significant advancement in the treatment of prostate cancer.

Dietary Intervention

A physician may recommend nutritional intervention, primarily a low-fat diet. Risk for prostate cancer is increased by high dietary fat intake, especially from red meat. Thus, limiting fat intake makes sense from a therapeutic standpoint, even though the data that support a beneficial outcome on prostate tumors are still lacking.

Counseling Patients About Prostate Cancer

Since the median age for diagnosis is 66 years, if prostate cancer has not metastasized, survival may not be impacted for 10 to 15 years or longer after the original diagnosis. Thus, patients may die of causes other than cancer. They will die *with* as opposed to *from* their disease. Patients with metastatic disease will die from their cancer if left untreated.

It is important for all males to receive regular prostate examinations after age 50, when the incidence of prostate cancer increases. While there is no correlation between BPH and prostate cancer, early symptoms of prostate cancer mimic those of BPH, so it is easy for men to assume that cancer symptoms are a natural part of growing older (i.e., BPH). Prostate cancer that is detected and treated in its early stage may be curable.

Patients taking or using any of the drugs indicated for treating prostate cancer must comply with their therapeutic regimen. This will maximize the potential for successful treatment.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Prostate Cancer; Part 2: Detection and Treatment." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 2/15/02. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-99-002-H01.

Name____

Address_______________________________________

City, State, Zip___________________________________

The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. Which of the following statements is true?
   a. Prostate cancer is the leading cause of cancer death in the U.S.
   b. Prostate cancer is more common in Caucasian males than in Black males.
   c. Prostate cancer is the most commonly diagnosed cancer in males in the U.S.
   d. Prostate cancer is decreasing in incidence.

2. The best predictor for prostate cancer is:
   a. benign prostatic hyperplasia.
   b. prostate-specific antigen.
   c. prostatic acid phosphatase.
   d. purified semen extract.

3. The type of therapy traditionally considered for patients with C or D stage prostate cancer is:
   a. hormonal.
   b. radiation.
   c. surgical.

4. Radical prostatectomy involves removal of the entire prostate gland and the:
   a. seminal vesicles.
   b. testes.
   c. ureters.
   d. urethra.

5. The procedure that involves surgical implantation of interstitial radioactive seeds within the prostate gland is:
   a. brachytherapy.
   b. cryosurgery.
   c. orchiectomy.
   d. prostatescentethis.

6. Synthesis of testosterone is controlled by:
   a. follicle stimulating hormone.
   b. gonadotropin-releasing hormone.
   c. adrenocorticotropin-releasing hormone.
   d. growth stimulating hormone.

7. All of the following are goals of hormonal therapy for prostate cancer EXCEPT:
   a. stabilizing disease progression.
   b. lowering testosterone to castration levels.
   c. promoting regression of the disease.
   d. increasing production of dihydrotestosterone.

8. The action of LHRH analogs results in all of the following EXCEPT:
   a. inhibition of the release of gonadotropin hormone from the pituitary.
   b. an initial increase in LH concentration and an immediate rise of testosterone levels.
   c. up-regulation of cellular receptors to cause an increased response to agonists.
   d. reduced testosterone synthesis.

9. The action of antiandrogens results in all of the following EXCEPT:
   a. total androgen blockade by eliminating both testicular and adrenal testosterone production.
   b. antagonism of DHT at its target tissues by competing for its binding sites on cellular androgen receptors.
   c. increased serum concentration of testosterone and DHT.
   d. inhibition of the enzyme 5-alpha-reductase.

10. All of the following products are antiandrogens EXCEPT:
    a. Eulexin.
    b. Lupron.
    c. Casodex.
    d. Nilandron.

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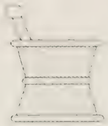

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MARYLAND
Pharmacist

VOLUME 76, NO. 2

- *Kelly Memorial Building*

- *Roll of Non-Prescription Medications in the Treatment of Alzheimer's Disease*

- *Herb/Disease Interactions*

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Pill Tiles

This is one of several fund raising efforts by the Maryland Pharmacists Association Foundation to refurbish the Kelly Memorial Building.

Only a few pharmacists still use pill tiles in their daily practice. In fact, many who compound ointments use sheets of paper rather than the traditional square tile.

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Maryland Pharmacist

The Official Publication of the Maryland Pharmacists Association

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Herb/Disease Interactions

by Kristina Boostrom, Pharm.D., R.Ph.

When a patient asks you about an herbal supplement, as a pharmacist you will probably inquire about what other medications they are taking or what symptom(s) they want to use the herb for. You should also ask if they have any diagnosed medical conditions. Numerous disease states have warnings or contraindications with one or more herbal therapies. Some of these interactions are listed in the chart below. Please note that this list is not all-inclusive and professional judgement should be used with each individual patient.

Disease/States	*Herbs that are Contraindicated*
Allergies to ragweed, daisies, asters,	Chamomile, Echinacea, Feverfew, Yarrow [1]
AIDS/HIV	Echinacea, Mistletoe, Woody Nightshade Stem [2]
Anxiety	Ephedra [2]
Asthma	Fir Needle Oil, Pine Needle Oil [2]
Autoimmune disease	Echinacea, Woody Nightshade Stem [2]
Arrhythmias	Belladonna, Lily of the Valley, Squill, Oleander, Henbane, Scopolia [2]
Depression	Valerian, [1] Indian Snakeroot, Kava Kava [2]
Diabetes (may affect glycemic control)	Garlic, Ginger, Ginseng, Hawthorn, Ma Huang, Nettle, [1] Blackthorn Flower, Psyllium Seed [2]
Glaucoma	Belladonna, Ephedra, Henbane, Scopolia [2]
Hypertension	Devil's Claw, Hawthorn, Ginseng, Goldenseal, Licorice, Ma Huang, Squill, Yohimbe [1]
Hyper or hypothyroidism	Bugleweed [2]
Pregnancy: As with all medications, all herbals should be used with extreme caution in pregnant or nursing women.	Internal Aloe, Black Cohash, Dong Quai, Feverfew, Ginseng, Kava Kava, Saw Palmetto [1] *This list is by no means complete, but the herbs above are definitely contraindicated
Prostate adenoma	Belladonna, Henbane leaf [2]
Pulmonary edema	Belladonna, Henbane leaf [2]
Renal inflammation or disease	Asparagus root, Horseradish, Juniper Berry, Licorice Root, Lovage Root, Sandalwood, Watercress [2]
Tuberculosis	Echinacea, Mistletoe, Woody Nightshade Stem [2]
Ulcers - gastric or duodenal	Cola Nut, Devil's Claw, Watercress, Rhubarb Root, Nasturtium, Indian Snakeroot, Horseradish, Gentian Root [2]

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1. Pharmacist's Letter. *Continuing Education: Therapeutic Uses of Herbs.* Part 1: Fall 1997.
2. Blumenthal M et al. The Complete German Commission E Monographs. Austin, TX: American Botanical Council, 1998.

President's Commentary

Teamwork—T.E.A.M.

Joseph A. DeMino, P.D.

The APhA Convention in Washington, D.C. was hosted by the state pharmaceutical associations from D.C., Maryland, and Virginia. They invited the Presidents and Executive Directors to attend APhA's board meeting where they asked us about the "hot" issues of the day and what concerns we had about the profession. There was discussion about the pharmacist shortage, workload, and the state of pharmaceutical care in our area.

They asked me to speak at the State Presidents Dinner. I spoke about mentorship and achieving our dreams and goals.

Motivational speaker Joe Theismann presented the first general opening session. As a lifelong Notre Dame and Redskins fan I was particularly happy and excited to attend and hear him speak. By now, I am sure you are thinking as many others were, what is Joe Theismann going to speak about to a group of pharmacists and what does it have to do with our profession. His speech was titled "Managing to Win," highlighting how to make the most of our life's experiences. He was a very energetic and dynamic speaker, and had the whole room on the edge of their seats. He spoke on how we all need to accept change and the challenges we go through getting people to accept change. He also spoke on being part of a Team and how important it is to be a "we" player instead of a "me" player. Together Everyone Achieves More—**T.E.A.M.** I mention this because we have been fortunate enough at MPhA to have a great team and we all have achieved more by working together this year.

Since this is the last time I will address you as the President of MPhA, I want to thank each member of our team for their support. For those of you that served on committees or helped out with various events during the year, I also thank you very much.

Fred Abramson
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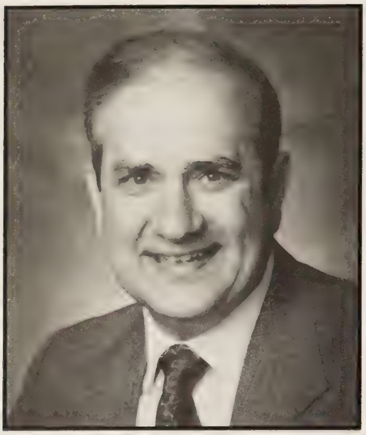
As you can see, many do the work. To become part of our winning team please call the MPhA office at 410-727-0746.

I would like to personally thank you for allowing me the privilege of serving as your president. I look forward to serving as chairman and to the continued success of the Maryland Pharmacists Association.

Just remember there is strength in numbers and Together Everyone Achieves More.



Director's Column

Commentary

Howard R. Schiff, P.D.
Executive Director

I like to be upbeat about what can be accomplished in the Legislature, but the legislators in Annapolis don't aways see the issues in the same light as pharmacists.

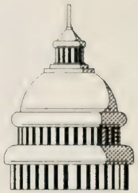
Pharmacist and Delegate Don Elliott's Uniform Prescription Card bill received an unfavorable report from the House Economic Matters Committee. The bill said that a prescription drug card should be based on the NCPDP (National Council for Prescription Drug Programs) standards, a group dominated by PBMs and the insurance industry. I was told that Express Scripts for one had already approved the format. However, Delegate Busch, chair of the Economic Matters Committee, sent a letter to Delegate Elliott stating that the "committee strongly believes that this issue warrants further study this interim, including an examination of developments in the federal level." I can't answer the question as to why an attempt to pass this bill was not made at the federal level. I do think the state legislators were hesitant to tread in what for them are unknown waters when some of the insurance entities, CareFirst and MAMSI in particular, opposed the legislation. A portion of the insurance industry has a knee jerk reaction to anything proposed. At one point, I tried to explain to an insurance lobbyist what the minor changes to her card would be, but I might as well have been talking to the wall because she was not interested.

The arguments against the bill were (1) that it would be too expensive because a new card would have to be issued and (2) there would not be enough space on the card for all the other necessary information. We appeared before the Senate Committee and refuted both arguments.

The bad news is that we are in a wait until next year mode with the hope that the legislators can be convinced in the interim. And, the good news is that we worked well with all facets of pharmacy on this issue.

We'll get 'em next time.

1999 Legislative Report



Bill	Title	Sponsor - Committee	Description	Result w/ammendment
Senate Bill 3 House Bill 18	Electronic Transmissions Act	Miller - Finance	Commercial law governing electronic transmission	Passed
Senate Bill 371	Medical Records Confidentiality	Hollinger - Economic and Enironmental Affairs	Prohibits disclosure of Medical Records	Passed with Amendments
Senate Bill 649 House Bill 1336	Pharmacies - Discounts of Medicare Benficiaries	Middleton, Hogan, Neall & Stoltzfus - Finance	Pharmacies to charge Medicare Beneficiaries no more than Medicaid allows	Unfavorable Report
House Bill 783	Prescription Drugs - Required labeling	Nathan-Pulliam, Morhaim - Environmental Matters	Requiring indication on label whether drug is generic of prescribed product	Hearing - No Action
House Bill 813	Substitution of NTI Drugs	Elliott, Sophocleus, Bozman - Environmental Matters	Refills for NTI drugs be the same as last dispensed	Withdrawn
Senate Bill 803 House Bill 895	Prescriptions Cards	Elliott, Sophocleus and Bozman - Economic Matters	Standard Prescription Card legislation	Unfavorable Interim Study
House Bill 896	Equitable Reimbursement for Prescription Drugs	Elliott, Sophocleus, and Bozman - Economic Matters	Level playing field with mail order	Withdrawn
Senate Bill 621	MPAP - Coverage Programs	Rosenberg - Enviromental Matters	Amended to encourage prescription coverage through free manufacturer program and study of buy-in by elderly over $ limits	Passed
House Bill 1115	Pharmacies - Record Logs	Dypski - Environmental Matters	Pharmacies must keep social security number confidential	Passed with Amendments

Paroxetine and Donepezil

A potential P450 drug interaction?

Angela Lotz, UMB Pharm.D. Candidate

Paxil (paroxetine hydrochloride) is a selective serotonin reuptake inhibitor indicated for depression, obsessive compulsive disorder, panic disorder, and social anxiety disorder. Aricept (donepezil hydrochloride) is a reversible inhibitor of acetylcholinesterase indicated for the treatment of mild to moderate dementia of the Alzheimer's type. Recently, two cases of suspected drug interaction between paroxetine and donepezil have been reported.

Donepezil is metabolized by the cytochrome P450 isoenzymes 3A4 and 2D6. Paroxetine saturates the 2D6 isoenzyme and inhibits the 2D6 activity. While not confirmed by pharmacokinetic studies, paroxetine-induced inhibition of the 2D6 isoenzyme could potentially increase serum concentrations of donepezil through decreased elimination of the drug.

The effect of donepezil on the clearance of drugs metabolized by the 3A4 or 2D6 isoenzymes has not been illustrated in *in vivo* clinical trials and the drug's potential for enzyme induction is unknown. However, donepezil's low rate of binding to the isoenzymes makes donepezil-induced inhibition of paroxetine metabolism unlikely.

Two elderly patients with Alzheimer's disease experienced adverse effects when donepezil was added to their therapy with paroxetine. A 78-year old male treated with paroxetine 20 mg daily for mood disorder was started on donepezil 5 mg daily for mild Alzheimer's disease. The patient complained of severe diarrhea, flatulence, and insomnia while taking paroxetine and donepezil concomitantly. When the dose of donepezil was cut back to 5 mg every other day, diarrhea and flatulence continued for two months until the donepezil was discontinued. A 67-year old female treated with paroxetine 20 mg daily for the past 3 years for dysphoria (general feeling of discomfort, unrest, unpleasantness) was started on donepezil 5 mg daily after being diagnosed with moderate Alzheimer's disease. After just 8 days of concomitant paroxetine and donepezil therapy, the donepezil was stopped due to the patient's agitation, confusion and aggression. Donepezil was reintroduced at a dose of 5 mg every second day. The patient again suddenly became confused, irritable, and verbally aggressive.

The data confirming an interaction between paroxetine and donepezil is lacking. However, these case reports suggest a potential problem that healthcare providers need to be aware of as elevated plasma levels of donepezil may increase the patient's risk for more severe adverse reactions. Further investigation on the concomitant use of paroxetine and donepezil is necessary. *In vivo* clinical trials on the effect of donepezil on the clearance of drugs metabolized by the P450 system would be especially beneficial due to the multi-drug regimens required by many patients in the elderly population.

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1. Aricept (donepezil, Pfizer, Inc.) Prescribing Information. Physician's Desk Reference, 54th edition. Medical Economics Co., Inc., Montvale, NJ 2000.

2. Paxil (SmithKline Beecham Pharmaceuticals) Prescribing Information. Physician's Desk Reference, 54th edition. Medical Economics Co., Inc., Montvale, NJ 2000.

3. Carrier L. Donepezil and paroxetine: a possible drug interaction. *J Am Geriatr Soc.* 1999;47(8):1037.

Horner v. Spalitto:
Has the liability of pharmacists really changed?

This article, by Harvey Tettlebaum, looks at the decision of the Missouri Court of Apeals and how it might affect pharmacy practice.

On July 6, 1999, the Missouri Court of Appeals, Western District, handed down its decision in the case of Horner v. Spalitto. That decision is now final since further attempts to appeal have been rejected by the Missouri Supreme Court. Since this case involving a pharmacist in the Kansas City area has generated so much interest within the profession, this article will discuss the holding and what it may mean in the future for Missouri pharmacists.

The facts of this case are important to note. As found by the Court of Appeals, Anthony Spalitto filled two prescriptions for Franklin Horner six days before Mr. Horner died of an apparent drug overdose. One of the prescriptions filled by Mr. Spalitto prescribed Placidyl 750 mg. One dose every eight hours. The other was for a 10 mg dose of diazepam, one dose every eight hours. Before filling the prescriptions, Mr. Spalitto consulted *Facts and Comparisons*, which indicated that the prescribed dose for Placidyl was three times the normal amount. It also warned that the effect of Placidyl was enhanced when combined with other nervous system drugs such as diazepam. Therefore, Mr. Spalitto called the prescribing physician's office to verify the prescription. The next finding of the Court of Appeals is significant. The Court stated:

> He [Spalitto] said that someone in the physician's office told him that the prescription was 'okay' because Horner 'needed to be sedated throughout the day.'

In a footnote to that finding, the Court noted that *Facts and Comparisons* noted that a sedation dose of Placidyl would be 100 mg to 200 mg no more than three times a day. An autopsy was performed on Mr. Horner in which it was found that his death "resulted from adverse effects of multiple medications (drugs), especially Placidyl (ethchlorvynol), which was near the toxic range."

In all cases, the pharmacist should be careful to document the conversation with the physician or the physician's office both what was told to the physician and what was told by the physician or physician's office to the pharmacist as well as what was told the patient about the prescription.

The Horner family sued Anthony Spalitto claiming that he, through his employees and agents, was negligent by filling a prescription when he knew it would expose Horner to unreasonable risk of great bodily harm or death, failing to do any investigation to ascertain whether or not Horner had a problem or potential problem with drug abuse or chemical dependence, failing to question the fact that Horner was having two prescription for the same drug filled on the same day by Spalitto, filling the prescription for Horner when he knew the recommended dosage had been exceeded allowing Horner to take the drugs on a long term basis when he knew that only short term use, not to exceed one week, was recommended, failing to determine what other drugs Horner was taking at the time and failing to provide Horner any warning either written or verbal of the potential side effects or adverse reactions to the drugs or the dangers created by taking it in conjunction with other drugs or pharmaceuticals.

In response to the lawsuit, Spalitto's attorneys filed a Motion for Summary Judgement contending that the case should be dismissed because the Horner family had not alleged that Spalitto had "breached its duty to [Horner] because it improperly filled a prescription with apparent irregularities on its face." Spalitto's attorneys relied upon the case of Kampe v. Howard Stark Professional Pharmacy, Inc., 841 S.W.2d 223 (Mo.App. 1992). In that case the Court of Appeals, Western District, had previously held that a pharmacist fulfills its duty to a customer when it properly fills a legal prescription that contains no apparent discrepancies on its face.

In what many consider to be an unexpected decision, the Court of Appeals reversed the Kampe decision finding that it had caused the trial court to apply the wrong standard or duty of care. The court of Appeals held that Kampe was incorrect in ruling that a pharmacist fulfills its professional duties when accurately filling a prescription without any duty to warn or to monitor. The Court of Appeals held that Spalitto's duty "was to endeavor to minimize the risks of harm to Horner and others which a reasonably careful and prudent pharmacist would foresee." While the Court of Appeals acknowledged that the duty to fill a prescription accurately may be the only duty of a pharmacist in particular cases, it went on to hold that in other cases the pharmacist's "education and expertise would require that he or she do more to help protect their patrons from risks which pharmacists can reasonably foresee." The Court remanded the case to the trial court for further proceedings to determine whether under the facts of the Spalitto case he had exercised "the care and prudence which a reasonably careful prudent pharmacist would exercise."

Interestingly, in reaching this holding, the Court of Appeals found that the Kampe decision "failed to comprehend the role a pharmacist must play in making the valuable, but highly dangerous, service for drug therapy as safe and reliable as it can be." The Court of Appeals then reviewed the definition of the "practice of pharmacy" found in §338.010.1, the Board of Pharmacy regulation found at 4 CSR 220-2.190 regarding counseling with the patient or the patient's caregiver and the statutory requirement found in the Omnibus Budget Reconciliation Act of 1990 which the aforementioned Board regulation implements. The court of Appeals held that this regulation obligated a pharmacist "to discuss with each customer or their caregiver information about the safe and appropriate use of the medication based on the pharmacist's review of available patient information." Because the case at the trial level was decided on a Motion for Summary Judgement without a full trial, it is not known whether that type of counseling occurred with Mr. Horner prior to the prescriptions in question being dispensed.

> ..."failed to comprehend the role a pharmacist must play in making the valuable, but highly dangerous, service for drug therapy as safe and reliable as it can be."

In defending the decision of the trial court, Spalitto's lawyers argued that a requirement that a pharmacist duty goes beyond that stated in the Kampe decision would unduly interfere with the physician/patient relationship. The Court of Appeals responded to that argument as follows:

Pharmacists have the training and skills to recognize when a prescription dose is outside a normal range. They are in the best position to contact the prescribing physician, to alert the physician about the dose and any contraindications relating to other prescriptions the customer may be taking as identified by the pharmacy records, and to verify that the physician intended such a dose for a particular patient. We do not perceive that this type of risk management unduly interferes with the physician/patient relationship...Instead, it should increase the overall quality of health care...The physician still is responsible for assessing what medication is appropriate for a patient's condition, but the pharmacist may be in the best position to determine how the medication should be taken to maximize the therapeutic benefit to that patient, to communicate that information to the customer or his physician, and to answer any of the customer's questions regarding consumption of the medication.

The Court specifically rejected decisions from other courts holding to the contrary. The Court in its remand of the case noted that it could not tell from the record whether Mr. Spalitto told the physician he was prescribing Placidyl at a significantly higher dose than that recommended for sedation, explained the problems with simultaneously prescribing diazepam with the unusually heavy dose of Placidyl or, given Spalitto's education and knowledge, what he should have done to fulfill his duty to Horner.

The question now on the mind of most pharmacists is what exactly is their duty to the patient. Unfortunately, the Spalitto case does not clarify the issue. If the duty of the pharmacist derives in part from his or her "education and knowledge" then there is no "reasonably prudent pharmacist" standard to follow, but one that must be determined on a case-by-case basis. On the other hand, as a matter of custom and practice, if not duty, most pharmacists when confronted with a prescription that described what they believed to be questionable prescribing practices, make an effort to make contact with the prescriber to verify not only that the prescription is correct, but that the prescriber understands the possible effect from the drug, dosage, and frequency ordered. What Spalitto does not seem to require is the pharmacist to argue with the physician. Rather, Spalitto instructs the pharmacist, in light of a physician who maintains that the prescription as ordered is correct, to counsel the patient about the possible side effects from the prescription. In all cases, the pharmacist should be careful to document the conversation with the physician or the physician's office both what was told to the physician and what was told by the physician or physician's office to the pharmacist as well as what was told the patient about the prescription. When counseling a patient in a situation such as that which confronted Spalitto, a pharmacist should be very careful to make sure that the patient understands what he or she is being told and that understanding should be documented as well. The practice of many pharmacists of posting a sign offering counseling to the patient if he or she wants it, will not meet the duty which the Court has described for pharmacists in the Spalitto case. In order to institutionalize procedures necessary to meet the Spalitto standard, it is recommended that pharmacists prepare written policies on these procedures and make sure that all employees are aware of and knowledgeable about these policies. A written policy in this case containing procedures requiring the pharmacist to obtain verification from the physician not only of the prescriptions but his or her understanding of the knowledge of the effects of the prescriptions as well as documentation of the counseling of the patient would as a practical matter have made it extremely difficult to sue the pharmacist successfully for negligence. Pharmacists having questions about exactly what should be contained in those written policies should consider consulting a knowledgeable attorney.

The answer to the question posed in the title to this article is "Yes" to the extent that the Courts will be looking more deeply into pharmacy practices to examine documentation to verify that the pharmacist has performed his/her duty. The Court in Spalitto reinforces the important role that pharmacists serve in society in the delivery of health care and the duty which pharmacists have in carrying out their responsibilities to the public.

This article was written by Harvey M. Tettlebaum, a partner in the Jefferson City, Missouri office of Husch & Eppenberger, LLC, and is Chair of its Health Law Practice Group. The information contained in this article should not be construed as legal advice or legal opinion on any specific facts or circumstances. The contents are intended for general information purposes only, and readers are urged to consult their own attorney concerning their own situation and any specific legal questions.

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Kelly Memorial Building

The Kelly Memorial Building is in the process of undergoing extensive restorations and renovations. The Board of Trustees has directed the Building Committee to restore our 47-year-old building. When the building is restored, some of the office and meeting space will be renovated to meet the future needs of the membership of the Maryland Pharmacists Association.

The exterior of the building has undergone a complete cleanup. The brick has been power-washed, and the windows replaced. The wood trim has been repaired and painted, and the roof has been replaced. The next step is to arrange the interior space to best accommodate our staff while performing their tasks to make our association work for you. This is the *big* step!

Do you know who E. F. Kelly, Dr. H.A.B. Dunning, Mr. Hendler, or B. Olive Cole was? And, why are they so important to our Association and to the history of Pharmacy? Why are we located where we are today? How did we come up with the final $5,000 needed to build the building? What did the original architect's plans present as a suitable design?

I have been researching the historical records and archives of the Maryland Pharmacists Association and am preparing a written narrative of the history of the Association, the building, and the important people associated with MPhA. This and many more important historical and fascinating facts will be presented in the upcoming issues of the *Maryland Pharmacist.*

Keep watching!

Richard Baylis, C.G.P.
Building Committee Chairman

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Professional Perspective

A Commentary by Fred M. Eckel, MS
Editor, Hospital Pharmacy Times

Where we practice has a great influence on how we see the pharmacy profession. I have observed this from many interactions with pharmacists during my more than 35 years in pharmacy. Because of my formal training in hospital pharmacy and becoming a hospital pharmacy director early in my career, I was guilty of it too—seeing things only from my perspective. It easily happens because pharmacists, like so many others, live and work in a professional silo. Because we work in a specific practice environment, we see things from that single perspective. As a hospital pharmacist, I often thought we did things right, but more importantly, we did the right things. Therefore, I thought our facet of the profession was more professional, better educated, and more committed. Thus, when I heard pharmacy practioners from other practice arenas express their concerns, I often discounted their ideas based on my bias about their practice sites. Many of my hospital pharmacy colleagues made similar remarks at our meetings, so we kept reinforcing our biases. I think it is this sense of superiority that has kept us from being involved with other pharmacy organizations and interacting regularly with pharmacists from other settings.

> *"When all pharmacists begin to see themselves as pharmacists first and hospital pharmacists (or any other kind of pharmacist) second, it will mean that we have gotten pharmacists out of their practice silos."*

My practice responsibilities have grown, so that I now interact regularly with all types of pharmacists, I have come to realize that the similarities in all practice arenas are much greater than the differences. Recently, at a meeting of pharmacists, I heard a former hospital pharmacy director, who is now running a state association, say how much he had learned about pharmacy since he had gotten out of his practice "silo" and really started learning about all facets of pharmacy practice. At first, like me, he thought that the problems were really different, but he came to realize that the pharmacy practice problems, the pharmacists' abilities and goals, and the environmental barriers are the same throughout the state, regardless of the practice setting involved. Similarly, every type of practice has outstanding practioners who are very competent, well motivated, and strongly committed. When we all accept this and start working together to solve pharmacy's problems, we will be able to make progress. Without this true cooperation based on respect, we will make halting progress at best.

When all pharmacists begin to see themselves as pharmacists first and hospital pharmacists (or any other kind of pharmacist) second, it will mean that we have gotten pharmacists out of their practice silos.

In my experience, the state-led initiatives to create a single pharmacy organization will help accomplish this more quickly than any other approach. We need to get pharmacists out of their silos to change their professional perspective. A unified pharmacy organizational structure providing one voice and one vision will help strengthen the pharmacists' voice. Have you discussed this possibility in your state? It is worth the effort.

This article was reprinted with permission.
Pharmacy Times, October 1999

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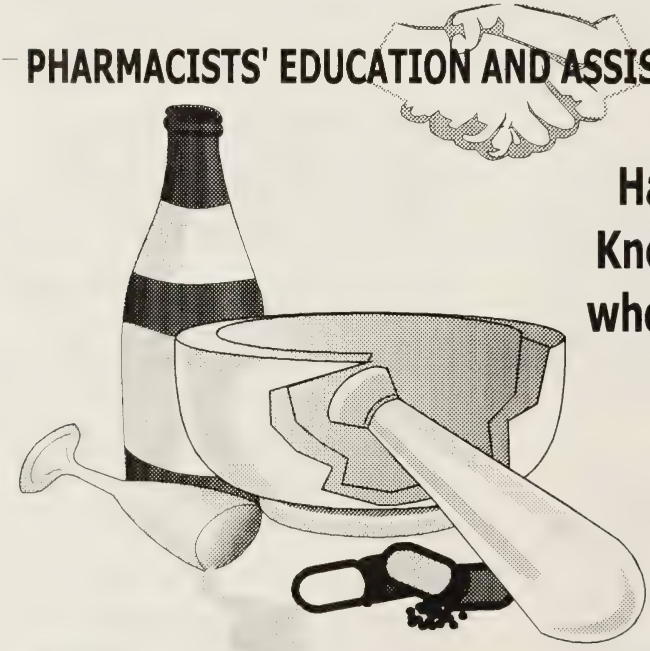

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A Pharmacist in Trouble

Bethany DiPaula, Pharm.D., BCPP

JT opened his eyes slowly, trying to figure out where he was. After a few minutes, pieces of the night before began to filter through his mind. The night had started like any other Friday. JT had finished the 8 a.m. to 6 p.m. shift at Peoples Drug Store and had left to meet his buddies for happy hour on Water Street. The three each had several beers and then headed for JT's apartment in Towson. JT vaguely remembered fixing another round of cocktails before pulling out his pipe. The friends had smoked a couple of bowls of marijuana, although, JT really was not sure how much. He must have passed out because he realized he was lying on the sofa in the living room dressed in yesterdays rumpled pants and an undershirt.

Suddenly, JT felt a huge wave of nausea. He jerked upwards in an attempt to make it to the bathroom, but the pounding from his head stopped him in his tracks. He leaned precariously against the headboard waiting for the nausea to subside. The clock on the wall read 12:30 p.m. He would have to get in the shower soon, or he would be late for work. JT decided to smoke a bowl. He had begun feeling guilty about coming to work high. However, it was easy to rationalize that the Saturday evening shift was always relatively slow. Besides, he knew that the marijuana would relieve his hangover, which meant he would function more proficiently.

Two hours later, JT was behind the pharmacy counter filling prescriptions. He was still enjoying some of the residual effects of the marijuana but had no problem completing his work. As he poured hydrochlorothiazide tablets onto a counting tray, he noted that the technicians no longer seemed as friendly. Five months ago, when JT had first started at the pharmacy, the technicians had chatted freely with him and often invited him to parties. However, now it was as if they sensed something was wrong and did their best to avoid him. JT shrugged off his coworkers' discomfort. Sure he came into work high, but clearly this was not affecting his job performance. In fact, the regional director had already approached JT about becoming an assistant manager of the pharmacy.

The evening seemed to drag on forever. Finally, the manager announced over the PA system that the store would be closing in 10 minutes. JT shut off the computers and began locking up. If he hurried, he would be able to stop home for a smoke and messages before meeting his friends at the Horse You Rode in On in Fells Point.

The apartment was dark except for the glow of the clock and the answering machine message light. JT flipped on the light switch and pressed the play button. A raspy female voice sobbed, "JT? This is Sarah. Mom and I are at Shock Trauma. It's Dad. They aren't sure if he is going to make it. Please come as quickly as you can." JT grabbed his jacket and keys and headed straight for the car. Shock Trauma was only about 25 minutes from where he lived.

His car roared out of the parking lot and onto the highway. Numbly, JT wondered what could have happened. He had just seen his parents a week ago and everything had been fine. "It has to be his heart," he concluded as he pulled into the parking lot. A few minutes later, JT was making his way down a crowded hallway. As he approached his destination, he spotted his sister and mother huddled miserably in a corner. "What happened? Is Dad alright?" Sarah looked up and with a strained voice choked out, "Dad is dead—He had a heart attack."

The next few days were a blur for JT. He spent most of his time isolated in his apartment, smoking marijuana to help numb the pain. However, eventually, he knew he had to return to work and resume his life. The first day back was probably the hardest. His workmates kept asking him how he was doing. Finally, JT had to excuse himself from the pharmacy and rush out to the car for a smoke. The rest of day seemed to pass by more smoothly, although in hind site, JT recognized that his workmates knew he was high and were purposely avoiding him. JT continued to function well at work in spite of his periodic smoke breaks and was eventually promoted to assistant manager. However, despite all of his success, JT knew that his marijuana smoking was starting to spiral out of control. He felt guilty about getting high at work and worried that he might eventually make a mistake, which would kill one of his patients.

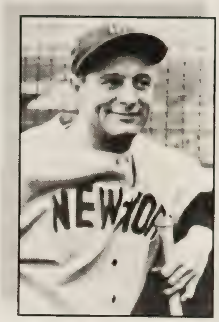
After a lot of sole searching, JT decided he needed some advice before things got too out of hand. He decided to contact, Pharmacist Education and Assistance Committee (PEAC), to see how they might help. Nervously, he dialed the phone number and almost hung up when he heard the voice on the other end asking how he might be of assistance. JT came in for an initial assessment with Tony Tommasello, the chair of the PEAC Committee. The two discussed what had been going on in JT's life and the role PEAC could play. After being assured that his confidentiality would be maintained, JT signed a contract with the Committee. As part of his commitment to recovery, he agreed to remain abstinent from substances of abuse, attend a 12-step program, and call a Committee member with progress updates on a regular basis. For the first time in a long while, JT began to feel good about the decisions he was making.

What you just read was a composite story of many of the clients which PEAC currently serve. Names, events, and identifying data have been changed to maintain the confidentiality of those involved. However, the story is not unique. The literature suggests that approximately 600 Maryland pharmacists will be diagnosed with a substance-related disorder some time during their lifetime. In fact, 20 Maryland pharmacists will become addicted to a substance this year alone.

Who are these addicts? They are people you work with on a daily basis. In many ways, they may seem just like you or they may even be you. Reporting a co-worker with an addiction can be frightening. However, it is even worse being a pharmacist knowing that you are risking everything you worked for, but have nowhere to turn.

The PEAC is an independent, not for profit, 501(c) 3 corporation which provides confidential support and advocacy to troubled or impaired pharmacists. PEAC is not part of the Board of Pharmacy. The mission of PEAC is to preserve professional health through advocacy and education. The Committee is comprised of pharmacists who have undergone specialized training in the recognition and referral of individuals with substance dependence and/or psychiatric disorders. PEAC members have extensive experience working with impaired pharmacists, guiding them through the process of recovery, and helping them cope with the complications that may have resulted from problems in their practice site. The Committee services also benefit employers by providing a process through which pharmacists' problems can be identified, addressed, and repaired. PEAC maintains client confidentiality. Please contact a PEAC member at 800-833-7587 or 410-706-7513 or 410-452-8683 if you:

- Would like more information about addiction or psychiatric illness
- Need treatment for an addiction or psychiatric illness
- Know a pharmacist who needs treatment, or
- Are interested in donating time or money



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Back to the Future

Maryland Pharmacists Association
118th Annual Convention

Saturday, June 10 - Tuesday, June 13, 2000
The Sheraton Fontainebleau Hotel, Ocean City, Maryland

Join Us

We hope you will enjoy the many educational, professional and social events planned for this year's convention. Come to Oceanfront luxury and enjoy the fun and excitement that comes with the sunrise, sunset, and the ocean breezes.

Continuing Education

The continuing education programs offered during this year's convention cover the hottest topics in pharmacy. Learn a new perspective on herbal medications, quality and legal issues in dispensing and manufacturing, and new drug treatment therapies. Earn up to 20½ contact hours of continuing education.

Trade Show & Job Fair

Connect to your future. Visit the exhibits on Monday, June 12. *During lunch*, you will find displays of the latest innovative products and services. You may also find if the grass is greener on the other side. Meet with prospective employers in a casual, nonintimidating setting (with no business suits or appointments). *No one under 16 years of age will be allowed on the exhibit floor.*

Social Events

Enjoy the laid-back atmosphere of the beach and come to the President's BBQ Cookout, Crab Feast, and Awards Reception and Banquet. Enjoy the best that Maryland has to offer—all in Ocean City. Have fun and relax with friends and family. There will be lots of great food!

What to Wear

Casual attire is appropriate for all education sessions and for the evening social activities. *The Awards Reception and Banquet is business attire.*

Raffle

Better than the Maryland Lottery—betting on the horses at Pimlico—the slots at Dover Downs—the tables at Atlantic City, the MPhA Raffle is your best chance to win two Airline tickets to anywhere in the contiguous United States and support the Association at the same time. You do not need to be present to win. Proceeds will benefit the MPhA Foundation.

Auction

Come join the fun—a real, live auction featuring our own Chairman, Jerry Herpel, as auctioneer. There will be many wonderful items. The excitement and bidding will take place at the Annual Reception on *Monday, June 12*. Proceeds will benefit the MPhA Foundation.

Advance Registration

Please complete the registration form included in this brochure. Type or print clearly and return the form with your check or credit card information to: **MPhA Annual Convention 650 W. Lombard Street, Baltimore, MD 21201-1572.** If you are paying with a credit card, you may FAX your registration to MPhA at 410-727-2253. Register before the deadline and save the $40 on-site fee. ***The deadline for Advance Registration is Friday, May 26, 2000.***

On-site Registration

Registration forms received after the advance registration deadline will not be processed. You will need to register when you arrive at the Sheraton and add the $40 on-site fee.

Registration Fees

Review the registration categories below to determine what is included in your fee. ***Full pharmacist registration*** fee includes all breakfasts, admission to all CE sessions, beverage breaks, lunches and all evening events. ***Full spouse/guest registration*** fee includes all breakfasts and all evening events. *(Fee does not include lunches or the Trade Show & Job Fair.)* ***Child registration*** fee includes all breakfasts and the President's BBQ Cookout on Saturday evening. *(Fee does not include lunches, the Trade Show & Job Fair, Crab Feast or Awards Reception/Banquet.)* ***Student registration*** fee includes all breakfasts, admission to all CE sessions, beverage breaks and lunches. *(Fee does not include the President's BBQ Cookout, the Crab Feast or Awards Reception/Banquet.)* ***Daily registration*** fee includes breakfast, admission to all CE sessions, beverage breaks, and lunch if served for that day. If you have any questions about the program and/or registration, please contact the Maryland Pharmacists Association at 410-727-0746, or toll-free in Maryland 1-800-833-7587.

Registration	Breakfast	CE Sessions	Beverage Breaks	Lunch	President's BBQ Cookout	Crab Feast	Reception & Banquet
Pharmacist	X	X	X	X	X	X	X
Spouse/Guest	X				X	X	X
Child	X				X		
Student	X	X	X	X			
Daily	X	X	X	X			

Registration Cancellation

To cancel your registration and receive a refund, a written request must be received by Friday, May 26, 2000. Cancellation requests received by this date will be processed and a refund issued less a $25 processing fee. Please allow 4-6 weeks for processing. All requests received after Friday, May 26, 2000, will mandate a 100% forfeiture of monies paid.

Hotel Accommodations

The Sheraton Fontainebleau is offering discounted hotel rates for MPhA attendees. To reserve your room, call the Sheraton directly at 1-800-638-2100. You must tell the reservation agent you are with the Maryland Pharmacists Association to receive the special rate. A deposit equal to one night's stay is required to hold the reservation. Currently an 8% state and local tax is applicable to the room rates. ***The deadline is Wednesday, May 10, 2000.***

Hotel Cancellation

Reservation cancellations must be made 72 hours prior to scheduled arrival to avoid a full room rate "No Show" charge. If you cancel, you must have a cancellation number to receive a refund. If you plan to shorten your length of stay, you must notify the hotel at or before check-in to avoid an early check-out fee of $146.

Room Rates

Single/Double	$146
Triple	$161
Quad	$176
Executive King	$166
Studio King	$176
Cabana	$289

Condos	
1 Bedroom	$178
2 Bedroom	$242
3 Bedroom	$305

Special Needs

If you require special accommodations or meals to participate in this educational program, please provide written information about your requirements to the Maryland Pharmacists Association at least ten (10) business days in advance of the meeting.

Back to the Future

MPhA 118th Annual Convention • Sheraton Fontainebleau Hotel, Ocean City, Maryland • June 10-13, 2000

Registration Form

Deadline: Friday, May 26, 2000

Please Type or Print Clearly

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Address ____________________

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Daytime Phone Number: ____________________ Fax Number ____________________

☐ ***Please consider me for appointment as an At-Large Delegate at the House of Delegates Meetings.***

Spouse/Guest Name ____________________

Full Registration	☐	MPhA Member			($195)	$ _____
	☐	Spouse/Guest			($125)	_____
	☐	Non-Member Pharmacist *			($295)	_____
	☐	Child under 12			($25)	_____
	☐	Full time Pharmacy Student			($35)	_____
Daily Registration	☐	MPhA Member	_____	@	($75)	$ _____
	☐	Non-Member	_____	@	($100)	$ _____

(Check all that apply) ☐ Sat ☐ Sun ☐ Mon ☐ Tue

On-Site Fee	☐	**Forms received after 5/26/00 must include the $40 on-site fee**				$ _____
Extra Event Tickets						
President's Cookout	☐	Adults/Pharmacy Students	_____	@	($30)	$ _____
	☐	Child Under 12	_____	@	($15)	_____
Crab Feast	☐	Adults/Pharmacy Students	_____	@	($35)	$ _____
	☐	Child Under 12	_____	@	($15)	_____
Awards Reception and Banquet	☐	Adults/Pharmacy Students	_____	@	($45)	$ _____
	☐	Child Under 12	_____	@	($20)	_____
House of Delegates	☐	Lunch (Sunday)	_____	@	($15)	$ _____
Trade Show & Job Fair	☐	Lunch (Monday)	_____	@	($15)	$ _____

Total Fee **$ _____**

So that we may better plan, please indicate the events you expect to attend:

	Yes	No	Number
Saturday, June 10			
President's Cookout	☐	☐	_____
Sunday, June 11			
Breakfast	☐	☐	_____
Lunch	☐	☐	_____
Crab Feast	☐	☐	_____
Monday, June 12			
Breakfast	☐	☐	_____
Lunch	☐	☐	_____
Awards Banquet	☐	☐	_____
Tuesday, June 13			
Breakfast	☐	☐	_____

ADA Compliance:
Please attach a written description of the dietary or special assistance needed. MPhA cannot assure the availability of appropriate accommodations without being notified ten (10) business days in advance of the meeting.

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Schedule at a Glance

Saturday, June 10

12:00 - 5:00	Registration
1:00 - 1:55	“New Therapies for Irritable Bowel Syndrome”
2:00 - 2:55	“Managed Care”
3:00 - 3:15	Beverage Break
3:15 - 5:15	“Wound Healing”
6:30 - 9:00	President’s BBQ Cookout

Sunday, June 11

7:00 - 5:00	Registration
7:00 - 9:00	Continental Breakfast
7:00 - 9:00	Trustee Breakfast - Meeting
8:00 - 8:55	“Hypertension”
9:00 - 11:00	“Liability for Errors in Expanded Pharmacy Practice”
9:45 - 10:00	Beverage Break
11:00 - 12:25	“Quality Manufacturing with Nutraceuticals”
12:30 - 2:00	Lunch - House of Delegates
2:00 - 5:00	“Pharmacists’ Role in Executing Prescriptions: Preventing Misfills to Ensure the Best Patient Care”
3:00 - 3:15	Beverage Break
6:30 - 9:00	Crab Feast

Monday, June 12

7:00 - 5:00	Registration
7:00 - 9:00	Continental Breakfast
8:00 - 9:45	“Toxicity and Drug Interactions of Herbal Remedies”
9:45 - 10:00	Beverage Break
10:00 - 12:00	House of Delegates
12:00 - 2:00	Lunch - Trade Show & Job Fair
2:00 - 5:00	“Natural Medicinals and the Pharmacist”
3:00 - 3:15	Beverage Break
7:00 - 10:30	Auction & Banquet

Tuesday, June 13

7:00 - 12:30	Registration
7:00 - 9:00	Continental Breakfast
8:00 - 9:45	“The Diabetic Continuum: Managing Function and Disease with Integrative Therapy”
9:45 - 10:00	Beverage Break
10:00 -10 :55	Product Selection and Pharmacist’s Liability”
11:00 - 11:55	“Detecting and Preventing Medication Related Problems”

Be Careful! Prescription Profiles are Confidential

by Angela Lotz, UMB Pharm.D. Candidate

The typical day at a pharmacy for a pharmacist or technician often involves doing several tasks at one time while experiencing borderline hypoglycemia and urinary retention. In the midst of all this, a patient stating she is Ms. Smith requests a list of all the medications filled for her family (including her husband which she recently divorced) for the past year—which she needs for tax purposes. Or, another common scenario that is often overlooked is when a patient calls on the phone and wants to know if their prescription was called in by the doctor, and what the prescription is for. *Be careful!*

It is the responsibility of the pharmacist to keep the medical record of the patient confidential.

As health care professionals we want to provide the information requested by the patient. Nevertheless, we must stop and think about whether we know for sure who we are talking to, how that information is going to be used, and whether the information requested is confidential and requires patient consent before being provided. How much information is too much information and who has the right to acquire this information?

As defined in the new state laws and regulations* the patient entitled to the confidentiality is a person who receives health care and on whom a medical record is maintained. In summary, only the patient and or a "person in interest" may obtain the medical record on any patient (including a personal representative, an individual acting under a health care power, or the parent or guardian of a minor.) *It is the responsibility of the pharmacist to keep the medical record of the patient confidential.* Authorization to a patient's profile is to be honored by the pharmacist only if the patient declares a request in writing. The written authorization must include the date of authorization, the patient's signature, the name of the health care provider, the identity of persons to whom the information will be disclosed, and the period of time that the authorization is valid. The pharmacist should keep a copy of the authorization.

Unfortunately there will be patients that will not appreciate the necessity to fill out a form in order to receive their patient profile. In an attempt to avoid patient confrontation, it might be beneficial if the pharmacist steps aside and takes a minute to speak with the patient directly to explain the reason for the form, followed by a pleasant comment regarding the pharmacy's willingness to provide the patient with all of their pharmaceutical health care needs.

*For more information visit website: http://mlis.state.md.us and search under "Other Documents" for Health-General 4-301and 4-303.

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David A. Knapp, PhD, Dean
University of Maryland School of Pharmacy

Interactions...

Interactions Between Practitioners and the School of Pharmacy Continue to Grow and Prosper

Over the past few years, I have used this column to focus on some of the ways that the School of Pharmacy and the practice of pharmacy in Maryland have interacted to the benefit of both. I'd like to summarize some of those interactions here.

The overriding reason that we have a School of Pharmacy is to educate future generations of pharmacists. If we can recruit and enroll bright, enthusiastic, well-motivated and caring young people, our job is half done. We rely significantly on practicing pharmacists to identify and steer qualified young people into the profession. Pharmacists themselves are in the best position to understand what it takes to be a pharmacist. They can transmit how it feels to do good things for patients in ways that no full time recruiter can communicate. With the day-to-day stresses that pharmacists face in community practice with a majority of work time devoured by third party and administrative concerns, it would be easy to lose the concern for the future of the profession, but that usually doesn't happen. Most of our successful students are here because of the efforts of mentors already within pharmacy.

During the four years of the doctor of pharmacy curriculum, fully one-third of the academic credits are devoted to the Experiential Learning Program. Pharmacists need more than classroom learning and the ELP is where they round out their education with real world experience. We rely on the efforts of over 200 preceptors and over 400 experiential rotations to conduct this critical program. The interaction of practicing pharmacists with full time faculty produces an unbeatable educational combination.

Several of our student rotation assignments are in the office of the Maryland Pharmacists Association. Students help with the midyear and annual meetings held in Ocean City. MPhA provides scholarships and supports travel not only to the Ocean City meeting, but to the American Pharmaceutical Association and other student functions. The Annual Alumni Graduation Banquet is the function where practitioners, students, and faculty celebrate the accomplishments of the graduates.

MPhA has urged the faculty to focus more on community pharmacy practice. The School has responded not only in the required curriculum, but also by establishing a joint PharmD/MBA program with the Merrick School of Business at the University of Baltimore. Two post-Pharm.D. community pharmacy residencies have been established in collaboration with CVS and Giant Foods. The Board of Pharmacy, MPhA, and the School are also working together on a public relations program focusing on contributions of the pharmacist to public health.

This past year, MPhA and the School have formed a joint tobacco settlement steering committee that has already provided pharmacist input into the state's anti-tobacco program. Now that the General Assembly has passed the Governor's budget and set the ground rules for spending tobacco settlement money, we are better prepared to find the right role for pharmacy in ending tobacco use in Maryland and fighting the damage that smoking has caused.

MPhA members play a big role in both the School's Educational Advisory Committee and the Board of Visitors. The advisory committee works with faculty on issues involving the Experiential Learning Program, the Nontraditional Pharm.D. Program, and other education activities. The Board of Visitors meets twice a year to provide strategic input and serves as a sounding board for the Dean. Both groups are influential in the School's activities.

Maryland has but one Maryland Pharmacist Association and but one School of Pharmacy. The practice of pharmacy in the state, both present and future depends upon successful interactions between our two organizations. History demonstrates that we have been successful in the past and we continue to strive to improve our interactions for the future.

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Role of Non-Prescription Medications in the Treatment of Alzheimer's Disease

Marty Eng, Pharm.D. Candidate

Alzheimer's disease (AD) is a debilitating disease that increases in prevalence as the population ages. Traditional treatments to date have been targeted at decreasing the in vivo metabolism of acetylcholine with acetylcholinesterase inhibitors. New strategies are targeting potential pathologies resulting from either free radical oxidation or inflammatory processes in hopes of altering the progression of AD.[1-3]

Gingko Biloba currently is accepted as a treatment option in Germany for dementia syndromes. However, it does not occupy this same place in medicine in the U.S. at this time for several reasons: lack of well designed, large-scale studies, lack of understanding of botanical products, lack of quality control of botanical products, and lack of experience with these products. Oken, et al, did a meta-analysis on fifty studies. At the end, all but five studies were excluded mostly due to vague outcomes such as cerebral insufficiency or lack of documented diagnosis of AD. No conclusion regarding clinical use was reached.[4]

If a patient decides to try treatment with Gingko, their physician should be actively involved in the monitoring of treatment. A study in JAMA by Le Bars, et al, showed a statistically significant benefit in patients with mild to moderate decline in cognitive functioning.[5] Patients that were excluded from this study included those with cardiac disease, IDDM, liver disease, chronic renal insufficiency, or other psychiatric disorder. The formulation that was used in this study was the EGb extract, which is the formulation approved by the German Commission E (the German equivalent to our Food and Drug Administration). This extract is not available in the U.S., however. Therefore, careful investigation into non-prescription products and their manufacturers is prudent. The manufacturer should observe Good Manufacturing Practices. The product should be standardized to 24% Gingko flavone glycosides and 6% terpene lactones. Once a dosage of product is begun, that product should be used consistently to avoid interproduct variability. The suggested regimen is 40 mg three times a day with meals. It may take 2-3 weeks to observe any clinical benefit. The benefit may only last for 6-12 months. It is also recommended that cognitive function be monitored every 3-6 months. Common side effects include headache and gastrointestinal discomfort. Gingko may prolong bleeding times. Therefore, patients on ASA or warfarin should be monitored more closely for bleeding. In addition, there have been case reports of subarachnoid hemorrhage.

In keeping with the antioxidant strategy, vitamin E was evaluated in a controlled trial of selegiline, vitamin E, or both. The study, published in the *New England Journal of Medicine*, showed that vitamin E 2000 IU daily may be beneficial in delaying the onset of Alzheimer's.[6] The endpoints most significantly influenced by vitamin E use were time to institutionalization and decreases in ability to perform ADLs. The differences were statistically significant. These outcomes are particularly appealing when considering the high demands placed on caregivers and the high cost of institutionalization. The delay may be as much as 7-8 months. Of note, an unexplained increase in falls and syncope were noted in the treatment group. However, vitamin E is usually well tolerated, relatively safe, and may be of benefit in cardiovascular disease as well.[7]

The other mechanism being targeted in recent research is inflammation. The principal class of non-prescription medications available are the NSAIDs or non-steroidal anti-inflammatory meds such as Motrin® (ibuprofen), Alleve® (Naproxen), and Orudis KT® (ketoprofen). The Baltimore Longitudinal Study of Aging conducted a retrospective study to determine if there was an association between the use of NSAIDs and risk of developing Alzheimer's disease.[8] The investigators discovered that those taking NSAIDs tended not to develop symptoms of AD. While the association between use of NSAIDs and risk of Alzheimer's is promising, many questions remain about the appropriate use for this purpose and NSAIDs have risks such as gastrointestinal bleeding and renal toxicity that must be considered and weighed against potential benefits. Therefore, more studies need to be conducted before recommendations regarding its use in Alzheimer's Disease (AD) can be made.

Supplementation is another source of therapy being looked at for AD. One case-control study conducted with 164 patients 55 years or older with a clinical diagnosis of dementia of Alzheimer's type (DAT) showed a decrease in folate and vitamin B12 in patients with AD.[9] However, this does not suggest that these deficiencies are responsible for Alzheimer's pathology nor that replacing these deficiencies would benefit patients with regards to Alzheimer's. Another supplement that is available is acetyl-L-carnitine. It has been proposed that it can mimic acetylcholine in the brain. However, more studies are needed to determine its actual effects and benefit.

There is a sense of urgency in finding a treatment for Alzheimer's disease because of the expected increase of the elderly population with the baby boom generation. In addition, other factors such as the cost of healthcare for these patients may lead many to seek alternatives or try new treatments in haste. Until studies show a definite benefit, the prescription acetylcholinesterase inhibitors remain the first line treatment. The clinician may choose, however, to consider vitamin E as adjunctive treatment in early stages of AD because it is inexpensive, mildly effective, and safe.

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The Impact of the Roman Empire on the Space Shuttle Design

A useless fact (with a twist) about technology:

The US standard railroad gauge (distance between the rails) is 4 feet 8.5 inches. That's an exceedingly odd number.

Why was that gauge used? Because that's the way they built them in England, and English expatriates built the US railroads.

Why did the English build them like that? Because the first rail lines were built by the same people who built the pre-railroad tramways, and that's the gauge they used.

Why did 'they' use that gauge then? Because the people who built the tramways used the same jigs and tools that they used for building wagons, which used that wheel spacing.

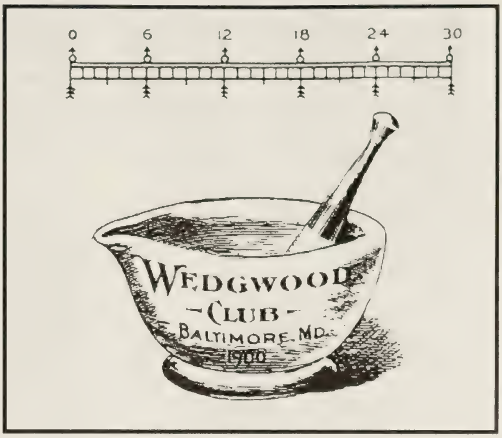
Okay! Why did the wagons have that particular odd wheel spacing? Well, if they tried to use any other spacing, the wagon wheels would break on some of the old, long distance roads in England, because that's the spacing of the wheel ruts.

So who built those old rutted roads? The first long distance roads in Europe were built by Imperial Rome for their legions. The roads have been used ever since. And the ruts? Roman war chariots first made the initial ruts, which everyone else had to match for fear of destroying their wagon wheels and wagons. Since the chariots were made for, or by Imperial Rome, they were all alike in the matter of wheel spacing.

(Continued on Page 32)

ONE HUNDRED YEARS OF WEDGWOOD MEN

By Melvin Rubin,
New boy on their block



One hundred years ago—on January 17, 1900, J. Webb Foster called members together for the first meeting of the Wedgwood Club. The oldest known correspondence went: "A band of convivial spirits, by good fortune, came together at the semiannual meeting of the Maryland Pharmaceutical Association. They spent a pleasant evening, and while en route to the Captains Office decided to form a club similar in character to the physician's now famous Flint Club."

'Character' is a great way to describe the club and its self-limited list of 51 active members. Samuel Jeppi, writing in the *Maryland Pharmacist* in February 1975, commemorating the 75th anniversary banquet, described the club as a "non-profit, non-political, non-commercial, non-philanthropic, non-munificent, often non-sense type of organization." And all of this non-action has been generated from members who managed to do more than just a little something during their professional careers. The role of original merrymakers included Dr. Alfred Dohme of Sharp & Dohme; Dr. George Bunting, the originator of the Noxzema Company; and Drs. Henry Hynson and James Westcott, of —you guessed it—Hynson, Westcott and Dunning (pass the mercurochrome please).

Later members included Manny Hendler (can't you just taste his rocky fudge ice cream?) and Herman Bloom (and you can just 'picture' him at the meetings), attesting to the club policy of including members who supported pharmacy in Maryland, in addition to pharmacists. The group works at having a percentage of two pharmacists for each 'traveler', as pharmacy support persons have been called.

The roster through the years always had past presidents of MPhA and the movers and shakers of the biggest whole-salers in the area as well as educators. Old timers, mid-timers, and new timers will recognize many of these people described above and other names such as Morgan and Millard, Schrader, Harris, Kelly, Muth, Wannenwetsch, Wolf, Voshell, Balassone, Bloom, Crozier, Gilpen, Foss, Hugg, Kinnard, Ogrintz, Jeppi, Pokorny, Slama, Sanford, Voxakis, Padussis, Ansell, and Glaser.

At the second meeting in 1900, the by-laws were recorded and signed by all. The tenth and last point provided the framework for a century of fellowship—"Shop talk strictly forbidden." Jokes are not forbidden, but one could say that funny ones are not allowed. But, that only adds to the festivities, since after hearing a dozen bad jokes, often with punch lines mangled or forgotten, with the teller routing through his pockets for the notes to remind him of what he started to say, the laughter in the room drowns out the puns anyway.

The handwritten manuscript detailing the early days of the club indicates that none of the original members knew or remembered why the group was named for Josiah Wedgwood or even who proposed the name. The record, which is purported to be true, shows that he was an Englishman who lived in the 18th century and produced utensils for chemists, pharmacists, and druggists. The quality was such that modern pharmacies still use products which are produced just as Wedgwood had made them. Why then Wedgwood? You might as well ask why the members don't talk shop. That's just the way it is.

Names from the past: 'Harlequin On the Severn', the Hotel Rennert, Hotel Joyce, Emerson Hotel, Brentwood Inn, Tierney's Restaurant—these are some of the places that the club has held its most intense and pensive deliberations in order to come to decisions which would help define the profession,—but seriously folks, the only time the mood is reflective is when the illness or loss of a member is reported.

The meetings are run with an iron fist by the Secretary-Treasurer. The position tends to be long term, with only eight people being entrusted with the responsibility in 100 years. The honor roll includes J. Webb Foster, Samuel B. Dove, Samuel Y. Harris, Emory G. Helm, George E. Wood, Joe Hugg, Charles Edenfield, and now Abe Glaser. Helm (1926-1957) and Hugg (1961-1991) had the longest tenures. Why does this rowdy group pay attention to the Secretary? Because he is considered the Chief Executive Officer and is responsible for the progress or failure of the Wedgwood Club of Baltimore, and because he has the money to pay for the meal.

The current Secretary, Abe Glaser, also runs the Maryland Senior Pharmacists Association, which, by the standards of Wedgwood, is a somber, focused group—with continuing education programs.

How laid back is the Wedgwood Club? I went to meetings for the better part of a year before they told me I was not a member. I was afraid to ask how an opening came about (did I replace a deceased member?), but now that I'm one of them I realize that the only additional privledge I have is paying dues. But that's fine, because now I can spend an evening with the guys who used to try to sell me Abbott, Upjohn, Squibb, and Lederle products without having to tell them I prefer selling the generics of their products. And besides, where else can I get a scotch on the rocks for $2.75?

Do you feel moved to belong to this illustrious organization? Want to go out to dinner once a month with the boys? Then call one of the 51 and ask to get invited to a meeting. There are a few rules, most of them unofficial. Coat and tie except in the summer; laugh at the jokes—at least the last few; accept the life savers that are given out by Andre (Buzz) Calas since it has become legally unacceptable to light what was the traditional after-dinner cigar, don't take Joe Loetell's poker chips home with you, be sure Abe knows you are coming, and -oh yeah -be a man!

One hundred years after the group began, 100 years with hundreds of members, 100 years of jokes, dinners, cigars, card games, comradery, and just one other constant—if you are a female and at the meeting, you had better be the waitress. Only men need apply for membership! Political correctness is too new for this club just yet, and when the large percentage of women in the profession require acceptability, they had better enjoy a bawdy joke!

There are some unanswered questions here:

Should there be another 'e' in the name 'Wedgwood'?

Why do you have to wear a coat and tie?

Where did the number 51 come from?

How come 59 names comprise the list of 51active members?

What's wrong with a good woman anyway?

On second thought, don't answer these questions—it's all part of the mystique!

* * *

(Continued from Page 30)

The Impact of the Roman Empire on the Space Shuttle Design

Thus, we have the answer to the original question. The United States standard railroad gauge of 4 feet, 8.5 inches derives from the original specification for an Imperial Roman war chariot.

Specifications and bureaucracies live forever. So, the next time you are handed a specification and wonder which horse's rear came up with it, you may be exactly right. Because the Imperial Roman war chariots were made just wide enough to accommodate the back ends of two war-horses.

And now, the twist to the story...

There's an interesting extension to the story about railroad gauges and horses' behinds. When we see a Space Shuttle sitting on its launch pad, there are two big booster rockets attached to the sides of the main fuel tank. These are solid rocket boosters, or SRBs. Thiokol makes the SRBs at their factory at Utah. The engineers who designed the SRBs might have preferred to make them a bit fatter, but the SRBs had to be shipped by train from the factory to the launch site. The railroad line from the factory had to run through a tunnel in the mountains. The SRBs had to fit through that tunnel. The tunnel is slightly wider than the railroad track, and the railroad track is about as wide as two horses behinds.

So, the major design feature of what is arguably the world's most advanced transportation system was determined by the width of a horse's [rear]!

Think about it!

Received via e-mail: Author Unknown

Continuing Education for Pharmacists

Volume XVII, No. 3

Introduction to COX-2 Inhibitors

Thomas A. Gossel, R.Ph., Ph.D.,
Dean, and Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Gossel

Wuest

Goals. The goal of this lesson is to discuss the role of nonsteroidal anti-inflammatory drug (NSAID) therapy with focus on the potential benefits of selective inhibition of the enzyme cyclooxygenase-2 (COX-2).

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. differentiate between the normal physiologic functions of the enzymes COX-1 and COX-2;
2. recognize the pharmacologic agents that are reported to have a preferential inhibitory action on COX-2;
3. identify pharmacologic principles of NSAID toxicity which have led to development of selective inhibitors of COX-2; and,
4. identify the most common adverse effects of NSAIDs and how they are produced.

A professional development program made possible by an educational grant from
SEARLE

Nonsteroidal anti-inflammatory drugs (NSAIDs) have improved the quality of life for millions of sufferers from arthritis and other painful conditions. It is estimated that approximately 1 percent of the U.S. population takes an NSAID for the treatment of osteoarthritis, rheumatoid arthritis, premenstrual tension, and a variety of musculoskeletal disorders that involve pain, stiffness and other symptoms.

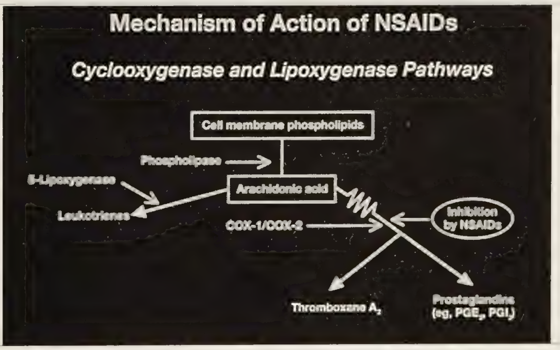
NSAID therapy is not without risks, however, especially gastrointestinal and renal toxicity. The extent of adverse events with NSAIDs is staggering, reported to occur more often than with any other class of drugs. Medical costs associated with hospitalization from gastrointestinal complications exceed $380 million annually. Total costs are reported at almost $4 billion each year in the U.S.

This lesson elaborates on the usefulness of NSAIDs in the treatment of pain. It discusses the pharmacologic rationale for development of adverse effects that are reported in the gastrointestinal tract. It then presents the reason for development of NSAIDs which inhibit one specific isoform of the enzyme cyclooxygenase in an attempt to enhance the safety profile.

NSAIDs — The Drugs

NSAIDs can be classed into groups in a variety of ways, as can be noted in standard pharmacology texts. The drugs have different pharmacokinetic profiles, and dosing schedules should be based on their plasma half-lives. Agents with a long half-life, for example, are dosed once or twice a day. These drugs may improve compliance in forgetful patients.

Figure 1.



Mechanism of Action of NSAIDs

Cyclooxygenase and Lipoxygenase Pathways

Mechanism of Action

All NSAIDs inhibit prostaglandin synthesis as their primary mechanism of action (Figure 1). A normal component of membrane phospholipids, arachidonic acid, is converted into prostaglandins and thromboxane A_2 by the enzyme cyclooxygenase (COX).

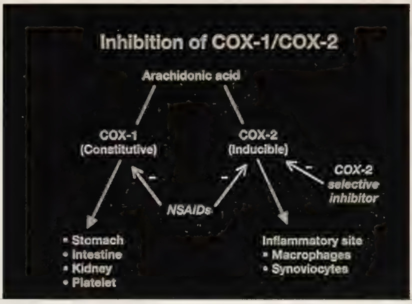
Synthesis of prostaglandins is tissue specific. The most prevalent prostaglandins in the gastroduodenal mucosa are prostaglandin E_2 (PGE_2) and prostaglandin I_2 (PGI_2; prostacyclin). Arachidonic acid can also be converted into a variety of lipoxygenase-derived products (leukotrienes) which play an important role in the inflammatory process.

Cyclooxygenase. Cyclooxygenase (COX) exists in two isoforms, COX-1 and COX-2.

It is proposed that COX-1 and COX-2 serve different physiologic functions. COX-1 is expressed constitutively. This means it is synthesized continuously. The function of COX-1 is to stimulate synthesis of prostaglandins that regulate normal cell activity, most notably platelet aggregation, homeostatic function of the vasculature, the gastrointestinal mucosa, and the renal system. In contrast, the action of COX-2 is more limited. COX-2, like COX-1, is constitutively expressed, but at low levels. However, its production is induced dramatically during the inflammatory process (Figure 2). A single amino acid variation at position 509 of cyclooxygenase (i.e., valine, COX-1; isoleucine, COX-2) differentiates the two forms.

Data from numerous studies strongly suggest that the anti-inflammatory action of NSAIDs results primarily from inhibition of COX-2. Many of the adverse effects (e.g., gastrointestinal toxicity and inhibition of platelet function) reported for these drugs are believed to be due to inhibition of COX-1. Until recently when the first nonsteroidal anti-inflammatory drug (i.e., celecoxib; Celebrex/Searle) which inhibited COX-2 preferentially was approved by FDA, all of the currently available NSAIDs inhibited both COX-1 and COX-2 to varying degrees.

Figure 2.



With discovery of COX-2 and hypothesis that its selective inhibition would provide the potent anti-inflammatory and analgesic activity of NSAIDs without influencing COX-1 and its normal physiologic functions, research in this area has been intensive. The goal was to develop compounds that possessed a high degree of selectivity for the inducible form (COX-2) while sparing the constitutive form (COX-1). The approval of celecoxib brings the first member of this group to the market.

Adverse Effects of NSAIDs

The American College of Rheumatology suggests the following guidelines for monitoring the effects of medications used in the treatment of rheumatoid arthritis. A *rare* adverse effect is one that occurs in less than 1 percent of patients using the agent. An *uncommon* adverse effect occurs in 1 to 10 percent of patients. A *common* adverse effect occurs in more than 10 percent of patients.

Adverse effects attributed to NSAIDs that are rare include confusion, depression, rash, headache, renal insufficiency, and serious hepatic toxicity. NSAIDs may also inhibit platelet aggregation reversibly and prolong bleeding time. Patients with prior aspirin hypersensitivity are at risk for developing bronchospasm when taking NSAIDs.

Gastrointestinal Complications. The primary adverse effects associated with NSAID therapy result from their action to alter gastric and duodenal mucosal defense mechanisms. This outcome is mediated primarily via inhibition of synthesis of mucosal prostaglandins. The action is both local and systemic, with systemic effects much more prominent.

It has been reported that up to 46 percent of patients receiving NSAIDs experience some type of gastrointestinal adverse effect, the most common being dyspepsia. This classifies certain gastrointestinal complications as *common* adverse events. Of greater concern is the prevalence of peptic ulcers in patients receiving NSAID therapy. Most studies report an incidence ranging from 10 to 30 percent of users. This represents a 10- to 30-fold increase in incidence over that in the general population.

Symptomatic ulcers and their complications such as upper gastrointestinal bleeding, perforation, and gastric outlet obstruction which are potentially life-threatening are reported in 2 percent to 4 percent of patients who take NSAIDs for a year. These complications frequently occur without warning symptoms, and have been reported within days of initiation of therapy with NSAIDs. Acute drug use therefore is not free of risk.

Presence or absence of symptoms is not a reliable predictor of gastrointestinal adverse effects in patients taking NSAIDs. One study evaluated patients requiring surgical intervention for gastric hemorrhage and/or perforation, or who died of peptic ulcer disease. Study results noted that 58 percent of patients with NSAID-induced complications were asymptomatic prior to surgery, compared with 25 percent of patients who were not taking NSAIDs and were asymptomatic.

The Arthritis, Rheumatism and Aging Medical Information System (ARAMIS) is a databank of arthritis patients in the U.S. and Canada. An analysis of nearly 2,000 rheumatoid arthritis patients enrolled in it revealed that 81 percent of those hospitalized with serious gastrointestinal complications were symptom-free. Gastrointestinal hospitalizations occurred, on average, approximately 17.3 months after patients started to take NSAIDs. The reason so many patients were asymptomatic has been attributed to the analgesic activity of NSAIDs which masked the warning signs of GI tract adverse reactions

From the ARAMIS study, it can be extrapolated that of the two million sufferers of rheumatoid arthritis in the U.S., approximately 26,000 will be hospitalized each year for NSAID-associated gastrointestinal adverse effects. It can also be calculated that approximately 76,000 persons out of an estimated 13 million users of NSAIDs in the U.S., will be hospitalized each year for NSAID-induced gastrointestinal adverse events.

The death rate among patients in the ARAMIS study from complications of NSAID gastrointestinal adverse events was 0.19 percent. This contrasted to an expected annual death rate from these events of 0.08 percent. Thus, it can be estimated that approximately one in every 1,000 patients with rheumatoid arthritis in the U.S. will die from NSAID-induced gastrointestinal complications each year. Using this calculation, approximately 7,600 persons in the U.S. will die each year from NSAID-induced gastrointestinal events.

The risk of death resulting from gastrointestinal complications from NSAID use may be compared with risk from other common causes. Death associated with gastrointestinal events in patients with rheumatoid arthritis taking prescription doses of NSAIDs has been reported to be approximately 0.2 percent per year. This figure corresponds with the risk of death from cigarette smoking or from cancer. It is 10 times greater than the risk of death resulting from a motor vehicle accident or home accident.

Gastric Protective Mechanisms

The stomach lumen is acidic with a normal pH of 1-2. The normal gastric mucosa is protected against this hostile environment of acid and pepsin by a number of defense and repair processes.

A layer of mucus rich in bicarbonate is secreted from surface epithelial cells. This increases the pH at the mucosal surface, despite the low luminal pH of 1-2.

The surface of epithelial cells exposed to the stomach lumen can resist back diffusion of acid directly. Moreover, epithelial cells repair defects in the mucosal layer rapidly through a process called *restitution*. This occurs because existing epithelial cells migrate along the basement membrane to fill in defects created by the sloughing of cells.

Blood flow into the mucosa delivers bicarbonate, oxygen, and nutrients to cells, and provides for disposal of back-diffused acid. Evidence is strong that decreased mucosal blood flow significantly impairs mucosal resistance to injury.

Endogenous prostaglandins have an active role in helping defend the gastric mucosa against damage. Prostaglandins inhibit acid secretion, stimulate mucus and bicarbonate secretion, increase mucosal blood flow, and enhance mucosal regeneration. This forms the therapeutic basis for combining the prostaglandin analog, misoprostol, with the NSAID diclofenac sodium, marketed as Arthrotec.

Table 1
Gastrointestinal Risk Factors with NSAID Therapy

- Prior history of peptic ulcer disease and/or GI bleeding
- Oral corticosteroid treatment
- Anticoagulant treatment
- Longer duration of NSAID therapy
- Old age
- Smoking
- Alcoholism
- Poor health in general
- *Helicobacter pylori*-positive status

Inhibiting prostaglandin synthesis decreases the antisecretory effects on gastric acid production, reduces bicarbonate synthesis, impairs gastric mucosal blood flow and, overall, impairs the adaptive cytoprotective mechanism. Because they inhibit platelet aggregation, NSAIDs can enhance upper gastrointestinal bleeding. The local effects of NSAIDs combined with their systemic actions on prostaglandin synthesis and platelet aggregation set the stage for development of ulcers and ulcer complications.

Risk Factors for Gastrointestinal Toxicity. Age is the primary risk factor for NSAID-related gastrointestinal complications in patients with rheumatoid arthritis. Other risk factors for gastrointestinal toxicity in patients taking NSAIDs are listed in Table 1. An evaluation of nearly 2,000 patients with rheumatoid arthritis from the ARAMIS study reported that persons who recently used H2-receptor antagonists and antacids, but did not experience an NSAID-related adverse effect, were at increased risk of NSAID-induced gastrointestinal complications.

Therapeutic Outcomes of NSAIDs

The pharmacologic actions of the various NSAIDs upon the pain response are essentially identical when measured objectively. However, analgesic responses to full therapeutic doses are often subjective due to considerable interpatient variability in response (i.e., extent of symptom control) to each drug. When one considers the average therapeutic benefit of all NSAIDs in all patients, a clinically significant difference between drugs is difficult to define. However, specific patient populations may experience enhanced analgesic relief from one particular NSAID over another.

The same reasoning is not valid when assessing drug action on the inflammatory response. The extent of inflammation and/or its inhibition can be measured objectively. Since analgesia normally corresponds with degree of reduction of inflammation, it can be extrapolated that reduced inflammation equates to increased analgesia.

When a particular NSAID fails to work or the patient becomes tolerant to it, it is appropriate to try a drug from an alternate chemical class. The same is true when a given NSAID exerts excessive adverse effects or toxicity in a patient.

Several studies have reported marked differences in clinical response to NSAIDs among different patient groups. Variations in their physicochemical properties, pharmacology, pharmacokinetics, and pharmacodynamics may partly explain the differences in clinical response. Variability in patient response to NSAIDs, the large size of the target patient population, and the extent and nature of adverse effects associated with traditional NSAIDs have stimulated development of newer therapeutic agents and new delivery systems.

Selection of an NSAID

Selection of an appropriate NSAID must consider a variety of patient factors. Some, such as risk factors, compliance, tolerability, and patient preferences, are interrelated. Most patients with rheumatoid arthritis require NSAIDs to reduce joint pain and swelling and improve function. Whether or not to use NSAIDs at full therapeutic doses in patients with osteoarthritis depends on their response to non-opioid analgesia combined with nonpharmacologic measures.

The American College of Rheumatology has stated that elderly patients, patients with comorbid diseases, and persons taking concurrent medications that reduce renal blood flow must be monitored carefully for renal insufficiency when taking NSAIDs.

The dosing regimen is also a consideration in drug selection. Frequency of dosing affects compliance. Since NSAIDs are commonly taken by the elderly who often have comorbid conditions, there is a potential for interaction between NSAIDs and other drugs.

Nonacetylated salicylates (e.g., salsalate) and ibuprofen have been reported to have a diminished risk for toxicity. It is possible that this is dose-related rather than therapeutic advantage.

Modifications in formulation, different routes of administration, and development of prodrugs have been attempted to reduce the incidence of upper GI bleeding. Controlled pre- and post-marketing studies have failed, to date, to support consistent reduced toxicity resulting from these modifications.

The risk also remains the same for enteric-coated aspirin and buffered aspirin compared with plain aspirin. Enteric-coated preparations of non-aspirin NSAIDs, and NSAIDs that are administered as suppositories or intravenously also continue to be associated with gastric and duodenal ulceration. This is because NSAID-induced gastric ulceration occurs from within the gastric epithelial cells via prostaglandin inhibition, rather than as a result of direct action on these cells while the drug remains in the stomach lumen.

Celecoxib

The first cyclooxygenase-2 (COX-2) inhibitor approved for use in the U.S., celecoxib (Celebrex/Searle), is indicated for relief of signs and symptoms of osteoarthritis and rheumatoid arthritis in adults. Clinical trials are underway to evaluate its use in acute and chronic pain in addition to its osteoarthritis and rheumatoid arthritis indications. Pfizer will co-market the drug product with Searle.

Celecoxib is reported to be approximately 375 times more selective for COX-2 than COX-1. It is approved for use in osteoarthritis at a dose of 200mg once daily or 100mg twice daily. Doses of 100mg or 200mg twice daily are recommended for rheumatoid arthritis. Celebrex is not approved for use in patients under 18 years of age.

Celecoxib labeling states, “In all three studies that included naproxen 500mg b.i.d., and in the study that included ibuprofen 300mg t.i.d., Celebrex was associated with a statistically significantly lower incidence of endoscopic ulcers over the study period.”

Two other COX-2 inhibitor drugs may follow Celebrex shortly: rofecoxib (Vioxx/Merck) and meloxicam (Mobic/Boehringer Ingelheim). Like celecoxib, both are administered in once-daily doses.

Continuing Education Quiz

This month's questions are taken from the article on "Introduction to COX-2 Inhibitors." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 3/15/02. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-99-003-H01.

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The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. Cyclooxygenase is the enzyme involved in the conversion of:
   a. arachidonic acid into prostaglandins.
   b. leukotriene I into leukotriene II.
   c. prostaglandins into arachidonic acid.
   d. leukotriene II into leukotriene I.

2. The most predominant prostaglandins in the gastroduodenal mucosa are:
   a. PGA_1 and PGD_1.
   b. PGC_1 and PGB_2.
   c. PGE_2 and PGI_2.
   d. PGG_2 and PGH_1.

3. The type of cyclooxygenase that is synthesized continuously, rather than being induced dramatically during the inflammatory process is:
   a. COX-1.
   b. COX-2.
   c. COX-3.
   d. COX-4.

4. Studies strongly suggest that the anti-inflammatory action of NSAIDs results primarily from inhibition of:
   a. COX-1.
   b. COX-2.
   c. COX-3.
   d. COX-4.

5. Many of the adverse effects caused by NSAID-induced GI tract toxicity and inhibition of platelet function are believed to be due to inhibition of:
   a. COX-1.
   b. COX-2.
   c. COX-3.
   d. COX-4.

6. The primary adverse effects associated with NSAID therapy result from their ability to:
   a. inhibit cytochrome P-450 enzyme systems.
   b. stimulate the chemoreceptor trigger zone.
   c. inhibit platelet aggregation and prolong bleeding time.
   d. alter gastric and duodenal mucosal defense mechanisms.

7. The process by which the gastric epithelial tissue repairs defects created by the sloughing of cells is called:
   a. remodeling.
   b. reconstruction.
   c. re-epithelization.
   d. restitution.

8. Endogenous prostaglandins have an active role in helping to defend the gastric mucosa against damage by all of the following mechanisms EXCEPT:
   a. inhibition of acid secretion.
   b. increased mucosal blood flow.
   c. inhibition of bicarbonate secretion.
   d. stimulation of mucus secretion.

9. NSAID-induced development of ulcers and ulcer complications result from:
   a. local inhibition of prostaglandin synthesis only.
   b. systemic inhibition of prostaglandin synthesis only.
   c. both local and systemic inhibition of prostaglandin synthesis.
   d. neither local nor systemic inhibition of prostaglandin synthesis.

10. The first COX-2 inhibitor approved for marketing in the U.S. is:
   a. Arthrotec.
   b. Celebrex.
   c. Daypro.
   d. Relafen.

Narrow Therapeutic Index Drugs: Special Care?

By Kenneth R. Baker

The latest topic in the pharmacy community involves what a Food and Drug Administration committee designates as narrow therapeutic index drugs, or NTI drugs. The FDA lists approximately 25 drugs in this category, including aminophylline, carbamazepine, lithium carbonate, phenytoin, theophylline and warfarin sodium. The reason for listing a drug as an NTI drug is there appears to be a narrow therapeutic range between the beneficial dose and an at risk dosage.

My interest in the subject peaked when I noticed many of the drugs listed as NTI drugs were the same as those I noticed most frequently involved in claims against pharmacists. This is particularly noticeable in the mechanical dispensing error claims. Since eighty five percent (85%) of the professional malpractice claims against pharmacists involve a mechanical error, this seemed to be an area worth considering for risk management.

The first step in risk management is identifying a problem. How can pharmacists use the knowledge that certain drugs have been recognized to have a narrower dosage window and that some of these same drugs appear frequently in malpractice claims against pharmacists? While I can not suggest a direct relationship, conservative risk management techniques seem worth discussing.

When receiving an order or a prescription for an NTI drug, pharmacists and technicians should train themselves to stop and think for an additional one to two seconds. Whenever we do repetitive tasks, we get into an "automatic mode." This is the cause of many claims. We can "get out of" this automatic mode of thinking by stopping, checking the prescription an additional time and particularly rechecking the NDC number. This will check for correct drug and correct strength.

A drug seen often in mechanical dispensing errors is warfarin. A common error involving warfarin is the incorrect strength used, i.e. the prescription calls for 2 mg but 5 mg tablets are dispensed. While such a mistake occurs with drugs shown to have a narrow range between therapeutic benefit and risk, a special alarm is warranted. This difference may not be long lost on plaintiff lawyers. I have seen Plaintiff lawyers request punitive damages in such cases, alleging the pharmacist had a higher duty of care when dispensing these drugs. While I do not subscribe to this theory, caution may be the best answer.

The pharmacist should always recheck the directions on all labels, but should particularly do so when using NTI drugs. When handling NTI drugs the pharmacist should develop a different procedure and thinking process to "get out of" the automatic mode. One way to do this is for the pharmacist to mark that part of shelf containing NTI drugs in a special manner that is immediately noticeable, such as colored tape with "NTI" written on it. When the pharmacist or the technician approaches that part of the shelf marked as "NTI," the pharmacist or technician stops and checks "one more time." In addition the pharmacist or the technician may write "NTI" on the prescription, so the pharmacist making the final check is aware and can give special attention while checking.

Counseling is an important element in today's pharmacy practice. The pharmacist can be an even more effective part of the patient's care if the patient is informed of how and when to best use the drug. This is particularly important with a drug which has a narrow therapeutic index since the method and timing of administration may be more critical. When an NTI drug is dispensed the pharmacist may take more time to be certain the patient recognizes the importance of taking each dose as prescribed.

Increasingly courts have recognized a pharmacist's duty to warn a patient of the nature and dangers of prescription drugs. As the potential for harm increases the degree of care used may also increase. In the 1994 Tennessee Supreme Court case of Pittman v. Upjohn, 890 S.W.2d 425, (1994), the Court found the pharmacy defendant had a duty "greater than merely filling the physician's prescription correctly." The court said "the pharmacy, as well as the physician owed [the patient] the duty to warn" of the "symptoms and dangers of complications that might arise from the use of Micronase." In this case the Court found neither the physician nor the pharmacy liable for the brain damage suffered by the adult grandson of the patient because it was not foreseeable the adult grandson would accidentally take his grandmother's Micronase. The Court indicated, however, that as the probability of harm increases the degree of care owed by the professional increases.

Errors involving NTI drugs may present greater risks. Pharmacists need to recognize the potential harm with all drugs, but should be particularly alert to NTI medications. We can never practice in a manner to avoid all errors. No matter what we do, there will be times, especially when we are busy, when we get into an automatic mode of thinking. Such a mode is natural and allows us to do some tasks quicker and with less stress. Some time during each day, however, we need to take a break out of this mode of thinking. Training ourselves to deal in this way with NTI drugs is a good way to handle this human tendency.

Kenneth R. Baker, B.S. Pharm., J.D.; Vice President and general counsel for Pharmacists Mutual Insurance Company

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MARYLAND Pharmacist

VOLUME 76, NO. 3

President's Commentary
"Dare to be Courageous"

The Art of Condolence
The Role of the Pharmacist

Safety Nets
OD or QID?

Nuclear Pharmacy
Radiopharmaceuticals

118th Annual Convention
In-Review

Murhl L. Flowers, P.D.
MPhA's 2000-2001 President

MARYLAND PHARMACISTS ASSOCIATION

JULY / AUG / SEPT 2000

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This is one of several fund raising efforts by the Maryland Pharmacists Association Foundation to refurbish the Kelly Memorial Building.

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118th Annual Convention
Ocean City, MD

President's Commentary

"Dare to be Courageous"

Murhl Flowers, P.D.

In my presidential address at the convention in Ocean City, I chose *"Dare to be Courageous"* as the motto for MPhA this year. Since many of you were not at the convention, I want to share with you excerpts from my speech that will explain why I chose this motto.

> I want to briefly touch on two issues—the first being membership and the other pertains to the challenges that face pharmacy in Maryland. In terms of membership, we must finally find a way to attract the employee pharmacists that now comprise the vast majority of pharmacists within Maryland. Of the 4,678 pharmacists in the state, only about 900 (or 19%) are MPhA members.
>
> This year, we will conduct forums with employee pharmacists to identify what we need to do to get them to join with us. In addition, your Board of Trustees will personally visit the majority of the pharmacies in Maryland, especially the 894 retail pharmacies, to discuss membership with the pharmacists. I assure you that your Trustees will be an active group this year.
>
> Now, let's look briefly at our profession. We have seen enormous changes over the years and the challenges that continue to face us certainly seem insurmountable at times. We have thought and said that some of these changes would "bastardize" pharmacy: *Chain pharmacies; managed care—the jury is still out on this one; mail order, and now, internet pharmacies.*
>
> We have survived these challenges, but we want to do more than survive—we want to thrive—but that will require enormous courage.
>
> Many pharmacists have treated these changes with indifference. This is extremely dangerous as indifference leads to apathy. We have seen the same thing happen in our society since the 1960's—because of indifference and apathy, the values of our society have changed. I am sorry to say that these value changes have not been for the good of any of us, in my opinion. Our society as well as the pharmacy profession have been "numbed" by these changes and challenges. Many people today continue to try to separate ethics from morals and morals from religion. I tell you that this cannot be done. As Abraham Lincoln stated in his Emancipation Proclamation, "We can't have the right to do what is wrong." If something is ethically, morally or religiously wrong, nothing that we can do will ever make it right. It will take enormous courage to rid us of the indifference and apathy in pharmacy in Maryland.
>
> If we are not willing to accept the challenges of doing new things in pharmacy such as drug therapy management and drug administration, other health team members—nurses and physician's assistants, will gladly accept this responsibility. It will require enormous courage to make this happen.
>
> What is our standard of care in pharmacy? Do we have standards that we can reasonably expect to see in every pharmacy in Maryland? What can we promise our patients? How pharmacy has reacted to the OBRA '90 legislation has been embarrassing, to say the least. It will require enormous courage to turn this around.
>
> In order to maximize the success of pharmacy in the state and leverage our voice, each of us must look at ourselves as pharmacists first and our practice setting second. We need one voice for pharmacy in Maryland and MPhA should be the umbrella under which this should happen. I

challenge the other pharmacist groups to work with us to make this happen for pharmacy in Maryland. It will require enormous courage to achieve this goal.

One definition of courage is the ability to sustain a clear vision of our world as it is, in all of its complexities and to have the *will* to seek the right answers.

Who cares about pharmacy and it's future? Physicians? Managed care? Manufacturers? Legislators? Nurses? Our patients? Obviously, no one cares about us but us ourselves. It seems as if pharmacy has been waiting for someone to come along to save us. But, who will save pharmacy? If not us, who? If not now, when?

There are no heroes. Just ordinary pharmacists like each of us in the room this evening that when we join together with a common goal we can accomplish extraordinary feats. It will demand enormous courage—that is why our motto this year will be *"Dare to be Courageous."*

I and the Board of Trustees need your help to extend this courage throughout all of pharmacy in Maryland. One year is not a long time and it is critical that we initiate this process. I ask you to join with me and the Board, to elevate pharmacy to a new height in Maryland.

I see this first year of the 21st century as a pivotal year for MPhA. The complexion of the Association has dramatically changed over the last few years, as has the profession. It is imperative that we assess where we are, determine where we want to go, and develop a plan to get there. In order to accomplish this goal difficult decisions will have to be made. It will require "courage" to make many of these decisions.

Last year, we were reviewing and approving blueprints and were looking forward to moving into a new building. Now, we have begun to fix-up, repair and renovate the Kelly building in preparation for 50 more years in our current headquarters. We must find a way to raise the necessary funds—this will require "courage."

As you can see, to accomplish these initiatives, there are some difficult decisions ahead. These decisions will require enormous courage. Each of us must make difficult decisions daily in our practice setting. Now, we must collectively make decisions to enhance and improve the viability of our Association. I am totally convinced that working together, this can and will be done.

Do you have the courage to work with the Board of Trustees to accomplish these goals? That is the challenge I offer each pharmacist in Maryland this year.

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Director's Column

What's Hot?

Howard R. Schiff, P.D.
Executive Director

From time to time people ask me, in and out of the profession, what is it that I do for the Association. At times the question stumps me for a moment as I try to decipher which of the "hot" topics I can point to. It could be that we are engrossed in the new medical records (prescription profiles) confidentiality law, preventing prescription errors, or dietary supplements and their quality. We represent Maryland pharmacists on all of these issues.

At our recent Annual Convention we offered continuing education programs on these topics. Every effort was made to bring our attendees something topical and perhaps a little different from the usual continuing education that is available.

Or, I could say that time is spent before the Board of Pharmacy trying to represent pharmacists and say those things I used "to shoot the breeze" about when I was behind the counter and had a few spare moments to talk on the phone. Our efforts initiated the reminder letter you now receive from the Board when license renewals are due. We still believe there is a difference between a pharmacist with an expired license and an unlicensed person, but that is not how the law is now interpreted.

Or, I could say we are concerned about the pharmacist shortage. Of course, not only is this related to the number of graduates from the Schools of Pharmacy, but also the greater opportunities that the new Pharm.D. graduates have. That discussion leads to one on workload and staffing which are related to reduced reimbursement from managed care (or managed costs if you prefer) and the increased number of prescriptions today and what happens when prescription coverage for Medicare recipients passes Congress.

Then, there are the internal Association activities that command attention. Membership, the Kelly Building renovations and fundraising for it, law book revisions, execution of resolutions passed by our House of Delegates, the various committees, the calendar of meetings for the rest of the year and into 2001 must all be dealt with.

I haven't yet mentioned testifying before and lobbying the legislature, collaborative practice legislation, uniform prescription card legislation, advising new pharmacies and pharmacists, giving the School of Pharmacy a practitioner's perspective, the "One Vision, One Voice" resolution that hopes to unite all the pharmacy organizations in Maryland, or smoking cessation programs. So, if I hesitate the next time the question is asked, it's not because I don't know, it's a question of which topic I think my listener would like to hear.

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The Art of Condolence: *The Role of the Pharmacist*

by Sarah Kim
UMB Pharm.D. Candidate

As more diseases and terminal illnesses are being treated in the outpatient setting, there is an increasing role for pharmacists to assist patients with their grief. For example, with the increasing number of anticancer drugs, many cancer patients are going to community pharmacies for their prescriptions. This trend places the community pharmacists in the important position of providing care for the dying patient. However, cancer and dying may be difficult and awkward subjects to approach, and many pharmacists may avoid these topics at a time when the patient needs special care. Pharmacists can prepare themselves for interaction with dying patients and their family members by becoming more familiar with the process of grief and the art of condolence. Numerous health-care providers have written about death and dying.[1,2] The paper will summarize the work of these individuals and apply their insights to pharmacy practice.

Phases of Grief

Although there may be cultural and religious variations, the basic characteristics of the grieving process are common to all people. Dr. Leonard Zunin and wife Hilary Stanton Zunin, in their book The Art of Condolence describe the grieving process by comparing the wound of a loss to the body's response to an injury.[1] First, there is shock, followed by pain, then a natural process of healing. Likewise, Zunin and Stanton divide grief into three phases:
1) shock, numbness, and disbelief;
2) experiencing the pain; and
3) resolution and acceptance.[1]

The first response to a loss is profound shock. The bereaved may cry out as if they received a physical blow. The mind and spirit go into shock as they are hit emotionally. Numbness and disbelief follow to block the emotional overload of the initial shock. They are protective mechanisms by which the bereaved can shelter themselves from the harsh reality of their loss until they are ready to expose them gradually. Also, the numbness acts as a buffer to allow the bereaved to carry out the necessary tasks such as arranging the funeral or memorial service. The bereaved may also see their loved ones in a crowd or hear their footsteps or their voices. They may find themselves setting an extra place at the dinner table. Such actions are evidences of the bereaved subconscious denial of their loss.

Then, as the reality of the loss begins, the pain also begins. The bereaved may bubble over with emotions of anger, sadness and guilt. There may be disorientation, physical complaints, emotional swings, lapses in clear thinking, and changes in behavior. A study by Lindeman in 1944 on the survivors of victims of the Coconut Grove fire in Boston showed similar psychological components of grief.[2] They involved feelings of an altered sensorium, a sense of unreality, increased emotional distance from other people, intense preoccupation with thought about the deceased and intense guilt feelings. The bereaved individual also displays anger, irritability, and may begin to act in a formalized manner of social interactions in order to curtail offensive behavior.[2] As they adjust to a new life, some may experience increased difficulty with social interactions, tending toward social isolation and, in the case of loss of a spouse, suicidal ideation.[3] Also, it has been observed that "all bereaved individuals may experience an exaggerated hostility toward the health-care team, especially the physician."[3] These sensations may be overwelming for the bereaved and the condoler, but they are natural, and will subside in time.

The final phase in grief is resolution and acceptance. Although most bereaved are able to resume their daily routine with relatively normal functioning in a few week or months, it often takes much longer for them to truly arrive at the stage where they can look to the future and make peace with the past. This final stage can be divided into five interwoven goals or tasks. First, the bereaved needs to accept the finality of the loss. Second, the bereaved must accept the painful thoughts, feelings, and behaviors that are so much a part of mourning. Suppression of these natural feelings may hamper the healing process. The third goal is to redirect the loving energy once focused on the lost relationship toward new relationships. They need to love again and live again. Fourth, the bereaved should be able to review and crystallize the memories of the deceased loved one, remembering both the positive and the negative. Finally, the bereaved will select memories to incorporate into the fabric of his or her life. The bereaved is now able to remember, without anguish, both the joys and the disappointment of the lost relationship; return to their regular activities, and reorient their energies to a new life. Although there is still a longing, the hole in the heart has been patched.

Grief of a Dying Patient

As Zunin and Stanton have expressed, grief is often referred to the emotional healing process of the bereaved. However, the dying patient also experiences grief as he or she must come to face the reality of death and the loss of family and friends. Five psychological stages of the dying process have been explored by Kubler-Ross.[3] These stages are: denial and isolation, anger, bargaining, depression, and acceptance. The dying patient may experience some of all of these stages in any order. In the first stage, the patient denies the diagnosis and seeks second opinions in hopes for a better diagnosis. This denial is natural and should not be discouraged. In the second stage, the patient expresses anger and resentment. He or she may be envious of those who are healthy and places blame on the health-care team. The patient is reacting naturally to the realization of the totality of the loss—family, friends, and all of life's work. Next, the patient may start bargaining with God, promising good behavior for an extension of life. Realizing the futility of the efforts, the patient may proceed to the depression (fourth) stage where he or she expresses grief over the approaching death. Finally, in the last stage, the patient accepts the reality of the imminent death. The patient lets go of the outside world, surrounds him/herself with people who care, and waits quietly for death to come.[3]

Condolence

As mentioned before, grief is a natural process. However, to the one suffering loss, the process of grief may seem anything but natural. In such times, the caring encouragement of the condoler becomes extremely important. Each word of comfort, each letter of condolence, each act of helpful service has the potential to serve as a genuine message of sympathy. The origin of the word condolence comes from two Latin roots: com, meaning "together" and dolere, meaning "to grieve." As two individuals come together to share in a pivotal moment, a bond is formed in which both are strengthened and renewed.[1]

In The Art of Condolence, Zunin shares his insight on condolence skills. The book discusses what to say, write and do for the one in grief. Perhaps the most common problem voiced by condolers is "I don't know what to say." Even the most articulate among us must confess that as soon as we are placed in front of one in grief, we are at a loss for words. What can we say to a patient dying of cancer? What can we say to the mother who has lost her only child? Because to many of us silence is uncomfortable, our first tendency is to fill the silence with small talk. However, what the bereaved needs at that moment are not words, but simply your presence. "Being there" does not necessarily mean being constantly physically present. Rather, it is communicating a genuine attitude of availability. Periodic reminders in the form of notes can be used to communicate our availability. Also, remember that what the bereaved needs is someone to listen to them, not a supply of answers.

The principle of debriefing can be applied to conversions with the bereaved. This process is not for the moment immediately after the notification of death; rather it should be used a couple of days to a couple of months after the notification. First, the condoler should ask about the facts. In the early stages of grief, it is easier for the bereaved to talk about facts rather than feelings. The conversation may be about the actual death, how the deceased died, and how the bereaved found out about the death. Once the bereaved feels more comfortable sharing, the next step would be to inquire about the thoughts, such as their first thought, their current thought, and any repetitive thoughts they might have. Third, the condoler should acknowledge and validate the feelings of the bereaved. Finally, reassurance and support should be given. This phase of the conversation validates the bereaved's grief and gives reassurance about the normalcy of their feelings. Keep in mind that reassurances may have to be repeated several times before the bereaved will actually listen and accept it. Throughout the conversation, it is important to keep in mind that your purpose is to help the bereaved live through the mourning, and not to resolve the grief with intellectual responses.

A letter of condolence is a powerful way to extend sympathy to one in grief. Although there is no "right" way of expressing sympathy, there are a few rules of etiquette that have evolved through social tradition. The first task is to decide to whom to write. The letter of condolence is most often written to the bereaved person with whom you have had the closest relationship. If you knew the deceased well, but do not know the members of the surviving family, it is still a gracious gesture to write a condolence letter to the family. Second, the letter should be written promptly upon hearing the news. It is more likely for you to express naturally the sympathy that you feel when your hearts are full rather that when the shock wears off. Every effort should be made to send the letter within two weeks of hearing the news, with the outside limit being six weeks for most cases. However, even after more time has passed and you still feel the desire to express your sympathy, it is still a good idea to write. There is no need to fear about rekindling the grief or apologize for the late letter. A genuine expression of your sympathy will still be appreciated. In selection of the stationary, typical colors include white, gray, cream, or pastel. Bold patterns and colors should be avoided. Also, a handwritten letter lends a warm touch that is more personalized. The length is not a major consideration, and may range from a few sentences to a few pages.

The Role of Pharmacists

Steven Pahre, a nephrology pharmacist, once wrote: "Death is often perceived by the health system as failure. Actually, it is an opportunity for the health system to provide support through one of the most difficult times of life."[4] As pharmacists play increasing roles in the care of patients, your role in loss and grief also increases. This means that in addition to making sure that the patient's drug therapy is optimal for palliative care, you must also guide the patient through the process of loss and grief.

In order to care for the dying, your attitude should be one of caring rather then curing.[3] The goal is not to shorten the grieving process, but to encourage and care for the grieving person while letting the grieving process take its course. As the patient proceeds through the dying process, your reaction should be one of understanding of the patient's behavior, acknowledgment of the patient's perspective, and acceptance of the patient's mourning.[3] What the patient needs is respect and acceptance more than reassurance and explanations.

After the death of a patient, what can you do to provide support for the grieving family? The Art of Condolence states that "a written word from a physician or other primary health-care worker conveys a powerfully enhanced message of caring and concern" (Zunin, 113). Thus, in addition to the phone call and a personal contact, a letter of condolence to the surviving family is a thoughtful way in which you can offer a final gift to the patient. You can promote the healing process by helping the bereaved express their feelings, accept their new identity, and feel reassured that others care and will assist if their help is needed or wanted. Several tips or guidelines are offered in The Art of Condolence that you as a pharmacist may wish to apply as you write the letter of condolence.

- In the case of a lengthy illness, note the courage of the deceased. This can be particularly encouraging if the patient had accepted the challenge of coping with suffering while remaining open.
- Briefly note special reasons for caring about this particular patient without violation of patient confidence.
- Allow your humanity, kindness, gentleness, and sensitivity to come through in your letter.
- Acknowledge the support, caring and love of the family toward the deceased. Positive reminders promote the healing process.
- If appropriate, express your appreciation of the loved ones for their cooperation, understanding, and assistance to you in caring for the deceased.
- Remember that anger is a part of grief and survivors may direct their anger and frustration at you. This is a natural outpouring of grief and must be dealt with sensitively and professionally.
- Do not offer (or limit) specific professional advice. The focus of the letter as a message of sympathy can be compromised if professional advice is given.

By applying these simple rules, you can write a letter of condolence that expresses sympathy and shows how much you truly cared for the deceased patient.

The community pharmacist can also play an important role by developing a relationship with the bereaved and keeping track of their medication history. If grief is unresolved, many times it leads to increased physical and/or mental illness. The symptoms of somatization of grief include feeling of tightness in the throat, shortness of breath, tendency to sighing respirations, empty feeling in the abdomen, muscle weakness, lack of strength, exhaustion, loss of appetite, and intense subjective distress described as "tension" or "mental pain."[3] The somatization of emotional stress may result in the bereaved constantly seeking medical care and purchasing nonprescription medications. In some cases, the bereaved may develop psychosomatic pathologies such as asthma, ulcerative colitis, hypertension, and others. The bereaved customer may purchase many prescription and nonprescription medications through the community pharmacy. Thus, you are in an excellent position to recognize the development of such problems. You can then refer such individuals to the appropriate professional for counseling. Examples of grief therapy and support groups include professional grief therapists, mutual support groups, and hospice support groups. Therapeutic intervention that focuses on unresolved grief can lessen the severity of the developing pathology, and in some cases, induces a remission of symptoms.[3]

Conclusion

The process of grief is a detailed, yet natural process that must be allowed to run its course. However, as members of the health-care team, there are many ways in which we can help the bereaved on their long journey. Understanding the stages of grief and the art of condolence may reduce the fears and awkwardness of conversing and caring for the one in grief, whether the dying patient or the bereaved family member. A greater knowledge of the patient will allow you as a pharmacist to provide the optimal care of the patient. I would like to conclude with words of poet William Blake, who captures the genuine heart of you and me as condolers in this:

Can I see another's woe
And not be in sorrow too?
Can I see another's grief,
And not seek for kind relief?

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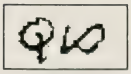
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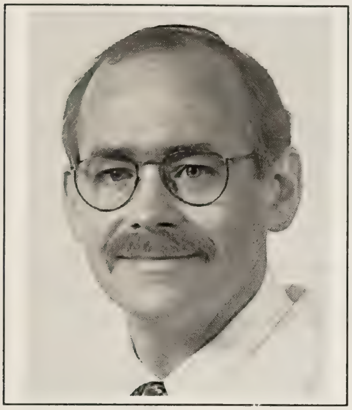
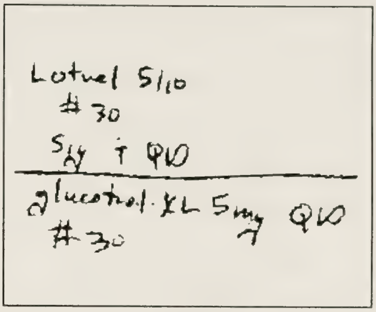

Dr. Eddie Dunn

Dr. Jon Wolfe

A patient presented the original prescription illustrated in Figure 1 to the pharmacy technician. The technician entered the prescription information into the computer as follows: Lotrel 5/10 (amlodipine 5 mg, benazepril 10 mg) Capsules, quantity 30, to be taken one capsule four times a day; Glucotrol XL (glipizide) Extended-release Tablets 5 mg, quantity 30, to be taken one tablet four times a day. These prescriptions were filled by a second technician, and placed in line for patient counseling by the pharmacist. During patient counseling, the pharmacist immediately detected the incorrect dosing interval for both medications. After changing the sig. in the computer from "four times a day" to the intended "once daily", and generating correct prescription labels, the pharmacist was then able to counsel the patient appropriately.

The medical literature contains numerous examples in which the use of abbreviation has resulted in medication errors.(1,2,3) Some of these errors have resulted in the death of the patient.(3) In this case, the hazardously written abbreviation "q.d." nearly resulted in a potentially serious overdose reaching the patient. Indeed, at first glance the abbreviation "q.d." appears to be "q.i.d.". The writer consistently made a vertical mark between the letters that closely resembles a freestanding "i". Fortunately for the patient, the pharmacist realized that neither of these medications is administered four times daily.

In the interest of a safer health care environment, guidelines concerning the use of abbreviations, and lists warning of dangerous abbreviations, have been published.(4,5) These lists should be posted, and consulted regularly, in every pharmacy. While the use of abbreviations in certain instances may be a time saving convenience to prescribers, the practice does not consistently promote patient safety. A better practice is to write out completely all directions to the patient, avoiding the use of abbreviations entirely. Pharmacists should also observe this practice when transcribing prescriptions received over the telephone.


Lotrel 5/10
#30
Sig i QD

glucotrol XL 5mg QD
#30

FIGURE 1

Pharmacist compliance with two Board of Pharmacy Regulations prevented these medication errors from reaching the patient. The pharmacist provided both patient counseling and verification of order entry information by the pharmacy technician. Patient counseling is one of the best ways to detect and prevent errors form reaching patients. Pharmacists who do not counsel are not practicing in the best interest of their patients. Pharmacy owners and managers must provide an environment conducive to patient counseling.

Many State Boards of Pharmacy now allow pharmacy technicians to enter prescription information into the pharmacy computer. Final verification of the prescription, however, must be made by the pharmacist, who then assumes total responsibility for all aspect of data entry. If the pharmacist in this case had failed to double-check these prescriptions for accuracy, a medication overdose with the potential for patient harm would have reached the patient. Harm from profound hypoglycemia would be almost unavoidable if 5 mg glipizide extended-release tablets were ingested four times daily. Pharmacists quite properly trust their technicians to work accurately, just as they trust other pharmacists to do so. However, that trust must be paired with vigilance as close as each of us applies to the work we perform personally. Asking questions and checking work are opportunities to learn, not signs of distrust.

This case is a valuable NCCMERP Category B error (an error occurred but the medication did not reach the patients).(6) An error clearly occurred. Two prescriptions received wrong labels. Those erroneous labels would have remained permanently in computer memory if not corrected. The potentially harmful doses, however, never reached the patient. The pharmacist in this case met the test of a high standard of practice. Board of Pharmacy policy was upheld. Best of all, our colleague shared this error for study.

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Pharmacists—Collaborative members of the health care team...

The Maryland Board of Pharmacy wants to promote and establish pharmacists as collaborative members of the health care team. To support this strategy, the Board implemented a comprehensive promotional campaign to increase public awareness of the importance of pharmacy related prevention and services provided by pharmacies, health care agencies, and human service organizations.

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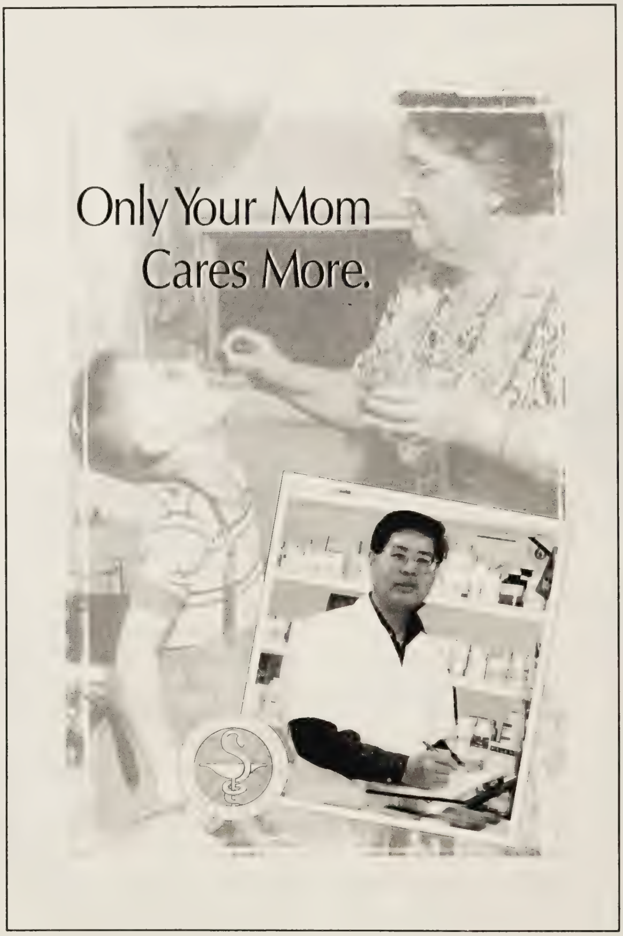

Nuclear Pharmacy

Sarah Kim, Pharm.D. Candidate
UMB School of Pharmacy

Many of us have had bone scans or heard of cardiac stress tests. To receive these procedures or "studies," we were lead to the nuclear medicine department and injected with what they called a radioactive drug to take "pictures" of an area of the body. The affected area of the body would light up on the screen and we would see images that the nuclear medicine technicians would point out are our arms or heart. Then as we wait in the "special" waiting room for patients who have already been imaged, the nuclear medicine doctor would view the images and determine the diagnosis, whether it is a fractured arm or coronary artery disease. The entire process seems to flow in logical order, but where does the pharmacist fit into the picture? The radioactive drug that was injected into us must have passed through the hands of a pharmacist. Indeed, a pharmacist with special training in nuclear pharmacy was responsible for the compounding and dispensing of the drug used for radioactive imaging.

What is nuclear pharmacy?

Nuclear pharmacy is a specialty practice of pharmacy that compounds and dispenses radioactive drugs used for diagnostic imaging and treatment. Nuclear pharmacy was the first formally recognized pharmacy specialty practice, established in 1978, not long after the development of nuclear medicine as a recognized specialty.[1,2] In the earlier years, most nuclear pharmacists practiced in institutional settings such as academia and hospitals. In these settings, most radiopharmaceuticals were compounded in the nuclear pharmacy located within the institution. Nuclear pharmacists in these settings were also involved in counseling, education and research. Today, the major practice setting has shifted from institutions to centralized, commercial pharmacies. These pharmacies provide unit dose radiopharmaceuticals to nearby hospitals and other institutions that do not have trained nuclear pharmacists within the institution.[3] It has been estimated that 70% to 80% of all radiopharmaceutical doses are dispensed through commercial nuclear pharmacies.[4]

What are radiopharmaceuticals?

Radiopharmaceuticals are radioactive drugs that localize in a specific area of the body and emit radioactivity to either a camera to provide diagnostic images or to a target area of the body for therapy. A generator is used to produce a radionuclide, an atom that has an unstable nucleus. The radionuclide has a known type of emission, usually gamma rays or beta particles. The radioactive material, or isotope, is then added to a compound known to localize in a specific area of the body. After the binding of the radioactive material to the compound (also called "tagging") is complete, the product is injected into the patient. The compound will then carry the radioactive isotope to the desired site. The emissions given off by the radioactive material in the body are detected by a gamma camera and an image of the distribution of radioactive material in the body is created.[2]

Most radiopharmaceuticals in nuclear pharmacy are used for diagnostic imaging. From bone scan (TcHDP) and cardiac stress tests (Cardiolite/TcMIBI) to the diagnosis of hyperthyroidism (I-123/I-131) and lung scans to rule out pulmonary emboli (TcMAA, Xe-133), many diagnoses are dependent on radioactive imaging of the body. A few radiopharmaceuticals are used for treatment of disease. For example, I-131 is used for the ablation of the thyroid gland in the treatment of thyroid cancer.

How is nuclear pharmacy different from traditional pharmacy?

The operation of a nuclear pharmacy is not much different than a traditional community, hospital or long term care pharmacy. Similar to traditional pharmacists, nuclear pharmacists are predominantly involved in the preparation and dispensing of drugs. They are also involved in the procurement (order, inventory, storage), quality assurance, distribution, provision of information and consultation, monitoring patient outcome, and research and development.[5]

However, there are some aspects of nuclear pharmacy that are different from traditional pharmacy practice. The differences are due mostly to the nature of the drugs that are used. Radiopharmaceuticals must be compounded using a radioactive material which must be obtained from a manufacturer or from an in house generator system.[2] The most commonly used isotope in nuclear medicine is Technetium-99m that is available on a continuous basis from a generator system. The radioactive material, or elute, is removed from the generator by passing sodium chloride over the column.

This process is called "milking" the generator. A shielded evacuated vial is used to collect the elute which, once tested for quality assurance, can be used in the preparation of the final radiopharmaceutical products. Many radiopharmaceuticals are available as "kit" formulations that contain all materials needed for the formulation except for the radioactive isotope. The radioactive isotope is added to the kit to tag the compound. Quality assurance must be conducted for each compounded radiopharmaceutical before dispensing any individual doses. Thin layer chromatography tests are generally used to obtain quick and accurate information on the radiochemical composition of the preparation.[2]

The nature of the drugs also calls for proper handling of radioactive and biohazard materials to regulate radiation and minimize risks. Nuclear pharmacists follow the NRC (Nuclear Regulatory Commission) guidelines for radiation protection and safety. Most compounding is conducted behind leaded glass shields using leaded glass syringes and leaded containers for radioactive materials. Most radiopharmaceuticals are dispensed in unit dose syringe form that can be injected into the bloodstream for easy administration and minimization of radioactive waste. Pharmacists and other health care professionals who work with radiopharmaceuticals wear badges that detect the amount of radiation exposure. Radiation exposure is measured in person-rem doses and should satisfy as low as reasonably achievable (ALARA) radiation levels.[1] When proper safety precautions are observed, the radiation exposure to a nuclear pharmacist is very low.

Future of nuclear pharmacy

Today, 900-1,000 nuclear pharmacists are estimated to be in the U.S., of which approximately 850 work in commercial nuclear pharmacies and approximately 75 work in institutional nuclear pharmacies.[3] According to Ronald J. Callahan, changes in health care economics, merging and down-sizing in hospitals, and the overall impact of managed care on the viability of hospitals in general has resulted in slow growth, or even small decline in the number of institutionally based nuclear pharmacists.[4] For the same reasons, he believes that as institutions seek outside venders for many services that were previously provided in-house, the future role of the commercial nuclear pharmacy in nuclear medicine will continue to increase.[4] Currently, there are seven commercial nuclear pharmacy sites in Maryland, including Syncor, Mallinckrodt, Eastern Isotopes, Nycomed Amersham of Washington D.C., and Mid-Atlantic Isotopes.[6]

Despite the increase in commercial nuclear pharmacies, many nuclear pharmacists desire greater involvement in clinical activities. A study by Kavula and Barnett found that nuclear pharmacists find greater satisfaction in performing clinical activities and prefer cognitive responsibilities over other activities.[7] However, surveys show that most nuclear chain pharmacists spend only 5% to 20% of their time in clinical activities, although a few radiopharmacists spend as much as 50% of their time.[8] As in other areas of pharmacy, the reality of pharmaceutical care has not escaped the field of nuclear pharmacy. The primary goal of pharmacists is patient care, and nuclear pharmacists will continue to shape the specialty of nuclear pharmacy to persevere in this goal.

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Memorial Building History

by Richard Baylis, C.G.P.
Building Committee Chairman

I have read all the "Maryland Pharmacist" journals from 1945 through 1953. These are found in bound editions in the Association's library. I was looking for a narrative history of the development of ideas as to why we needed a headquarters building and how the membership and friends of pharmacy raised the required funds to bring it about. Many individuals and organizations were involved.

In the 1940s and for many years, the Maryland Pharmaceutical Association, as it was then known, held Annual Meetings in different locations around the State of Maryland and in West Virginia, Pennsylvania and Atlantic City, New Jersey. They held two other regional meetings, one on the Eastern Shore and one in Western Maryland. In those days, there were no county associations—they developed after World War II. The Baltimore Retail Druggists Association was closely intertwined with the leadership of the State Association. In fact, the Kelly Memorial Building was built as headquarters for both organizations.

KELLY MEMORIAL BUILDING, BALTIMORE
BUILT IN 1953

The average wage of an employed pharmacist in the late 1940s and early 1950s was about $2 per hour. If a pharmacist worked 48 to 50 hours per week, they grossed around $100 per week. This was very high wages. Most workers made from 50 cents to $1 per hour. I remember the fountain help and porters made 25 cents per hour plus carfare, if they had to travel to the suburbs by streetcar. A Baltimore row house, in the ritzy neighborhood off Loch Raven Boulevard, sold for about $4,000 and a new Chevy sold for about $600.

The Associations succeeded in raising $100,000 from 65% of its members in seven years. To make a donation of $100 was a great sacrifice. The association only had about 200 to 300 members in those days. Most were neighborhood store owners and their second shift pharmacist—if they could afford two pharmacists to run the business. The fundraisers went personally to each pharmacy and begged for the money. The members had the tradition of not even mailing in their annual membership dues. The Executive Secretary was expected to visit the store and collect the dues.

Offices were rented at 10 West Chase Street when the Association decided to find or build a building of their own. This was in the block of Chase Street where Hyson, Wescott and Dunning were located. The executive committee quickly decided the best plan was to build their own building. The first proposed site for the building was on North Charles Street and Highfield Road, just above University Parkway. As planning moved along, the building committee actually selected an architect and the sketches of the proposed building were published in the association journal. The design was modeled after the recently completed American Institute of Pharmacy building located in Washington, D.C. This design stuck until they were forced to abandon the Charles Street site.

In 1950, they obtained zoning permission for the building and forged ahead with plans for construction. Several of the "to be" neighbors objected strenuously, and went to court to obtain an injunction. They succeeded in overturning the zoning board's decision. At the same time, the landlord of their Chase Street offices, decided to sell the building. This forced the Associations to look for temporary quarters. They found refuge at 302 West Lombard Street in the sales showroom of the Henry B. Gilpin Company where they stayed until the Kelly Building was built three years later.

The decision to name the building in memory of Dr. E. F. Kelly was first reported in the September 1947 issue of the journal. Dr. Robert L. Swain is reported to have made it the theme of a speech he made at the Annual Meeting.

Student Scholarships and the Harry D. Kaufman Award

Each year the generous support of the Scholarship Fund by members of the Maryland Pharmacists Association makes it possible for MPhA to provide money for scholarships to deserving pharmacy students. Also presented each year is the Harry D. Kaufman Award. The selection of winners for the awards is made by the Past Presdident's Council.

Harry D. Kaufman Award

MPhA has selected a deserving third-year student who has displayed dedication and devotion to the ideals of pharmacy through community service. This award is given in memory of Harry D. Kaufman. Community service does not have to be related to pharmacy to be considered for this award. Past winners have been involved in church activities, charities, volunteer work, and many other areas. This year's winner is Jared S. Calish. He was presented with $100 and a certificate.

Joe DeMino presents Jared Calish with the Harry D. Kaufman Award

Chau Lien Hoang is presented one of the PEP Scholarship Awards by Howard Schiff

PEP Scholarships

MPhA provided three $300 PEP Scholarships for first and second year pharmacy students who need financial assistance. These scholarships are based primarily on financial need; however, previous financial aid is not necessary to be considered for a scholarship. This year's winners are Siengtha Tep, Chau Lien Hoang, and Meredith Evans.

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Rx AND THE LAW

By Kenneth R. Baker, B.S.Pharm., J.D.

This series, **Pharmacy and the Law**, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

"PILL SPLITTING" – IS IT LEGAL?
IS IT COVERED BY MALPRACTICE INSURANCE?

Several pharmacists have called asking these questions regarding "pill splitting".[1] These pharmacists have indicated they are receiving requests from third party payers and from physicians, and occasionally from patients, to split some prescription medications prior to dispensing. In most cases the questions involve unscored tablets and in most cases, the reason for the request is to save money for the patient or the third party payer.

The real question for the pharmacist involves two considerations – the law and pharmacy judgement. Whether the pharmacist can "split" unscored tablets is determined by both considerations. In most states, at present, there are no laws or pharmacy regulations specifically forbidding "pill splitting", although there are warnings in pharmacy literature discouraging it. The pharmacist, asked to "split" tablets, needs to know if there is a legal restriction in the state in which he or she practices.

As part of the legal consideration, the manner in which the prescription is written becomes important. If the prescription indicates "DrugX, 50 mg", it must be filled exactly as written. In order to fill the prescription with a split DrugX, 100 mg tablet, the pharmacist must be able to split the tablet in a manner that assures each one-half contains exactly 50 mg of DrugX. Therein lies the problem. An unscored tablet cannot be divided exactly equally. Without the prescriber's specific orders to split the tablet, the prescription may not have been filled as ordered. This may be a violation of the state pharmacy practice act.

Even if the doctor does order or approve the split "into two parts of approximately the same strength", the pharmacist's act of splitting the tablets into strengths commercially available, may arguably amount to illegal compounding under Section 503A[2] of the FDA Modernization Act of 1997. It may be argued that the compounding definition is broad enough to include preparation of a dose by splitting the tablets. If so, and if the resulting one-half dose is commercially available, the action could be interpreted as a violation of the federal statute which says: *"A drug product may be compounded . . . if the licensed pharmacist . . . (D) does not compound regularly or in inordinate amounts (as defined by the Secretary) any drugs products that are essentially copies of a commercially available drug product."* [3] (emphasis added).

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[1] See, www.health24news.com, Holton,N., Pill Cutting for Cost Cutting, (March 2000, *Health24)*

[2] 21 U.S.C. 353 § 503A

Even if the law allows it, the decision must be made by the pharmacist based upon professional judgement and patient best interest. Generally speaking, pill splitting by the pharmacist is not a good idea and should be avoided, absent some overriding consideration for a particular patient.

If the pharmacist knows a patient is going to split unscored tablets, the law will have little to say about the patient's actions, but the pharmacist should consider the application of pharmaceutical care to the situation. The pharmacist should: warn the patient about the inexactness of the resulting half table dosage; warn the patient of the possible effects of an inexact dose – too high or too low; and tell the patient to let his prescriber know that he/she is splitting tablets. The pharmacist should also consider what other advice he/she should give. The pharmacist should be certain the patient understands that while cost is a legitimate consideration, it should not be the primary consideration.

The second question -- "Is it covered?" – is a product of the first. Most policies contain an exclusion similar to this: *"This policy does not apply to . . . damages caused by your willful violation of a regulation or statute pertain to the practice of pharmacy . . . committed by you or with your knowledge or consent."* (emphasis added). If the action of "pill splitting" is known by the pharmacist to be a violation of the law, the exclusion applies. If however, the pharmacist does not willfully violate the law, even if it later becomes apparent it is a violation, the policy would cover, in spite of the exclusion, even if the action is unwise. A board of pharmacy or a court, however, may not care if the pharmacist was ignorant of the law and will not excuse the pharmacist who pleads, "I did not know about that rule".

The ultimate bottom line for the professional pharmacist is – if it is not good pharmacy practice, don't do it.

©Kenneth R. Baker is Vice President, General Counsel at Pharmacists Mutual Insurance Company.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with the policies and procedures of their employers and insurance companies, and act accordingly.

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[3] 21 U.S.C. 353 § 503A (b) (1)(D).

118th Annual Convention
Ocean City, Maryland
President's BBQ

Reggae Band

*Dick Baylis, Elsie Prince,
Sandy and Carl Markowitz*

*Student Volunteers - Priya Kumar, Bill Ranker,
Brian Berry, Alison Sinclair, & Gloria Rizkallah*

*LaVerne Naesea, Michelle Andoll,
Phil Brooks, and Marcus Carson*

MPhA Awards & Recognition

Each year the Maryland Pharmacists Association recognizes professional excellence through a series of awards. All nominations were considered by the Past President's Council which is repsonsible for selecting the recipients. These awards were presented at the 118th Annual Convention in Ocean City, Maryland.

MPhA Honorary President

About the Award:
An honorary position on the Board of Trustees given to a person who has worked for the MPhA or Maryland pharmacy over a long period of time. The recipient receives a plaque and is an official, ex-officio member of the Board for one year.

Who is Eligible:
Any long standing contributor to the profession or the Association. The honoree need not be a pharmacist or a member of MPhA.

Past Honorees:

1999	Frank X. Radigan
1998	Alfred Abramson
1997	Pete Green
1996	Mary Anna Frank
1995	Maribeth Porter
1994	Ralph Small
1993	Isabel Futeral
1992	Betty Alpern
1991	Mark Golibart
1990	Paul Freiman
1989	James Cragg
1988	Walter Weglein
1987	Bernard Lachman
1986	William Heller
1985	Peter Lamy
1984	Joseph Dorsch
1983	Alexander Mayer
1982	William Kinnard, Jr.
1981	John Krantz, Jr.
1980	Victor Morgenroth
1979	Joseph Kaufman
1978	Paul Reznek
1977	I. Earl Kerpelman
1976	Morris Lindenbaum
1975	Frank Block
1974	Harry Schrader
1973	Morton Schnaper
1972	Wilfred Gluckstern
1971	H. Nelson Warfield
1970	Irving Cohen

2000 Honorary President
Jack D. Peters

Pharmacists Mutual Distinguished Young Pharmacists Award

About the Award:
Awarded to a pharmacist who has graduated within the past nine years and has made a significant contribution to the profession through service in a local, state, or national pharmacy organization. The recipient receives a plaque.

Who is Eligible:
Any MPhA pharmacist member who graduated from pharmacy school within the past nine years.

Past Honorees:

1999	Rhea del Rosario
1998	Dixie Leikach
1997	Michael Souranis
1996	Alisa Billington
1995	Mark Sanford
1994	David G. Miller
1993	Kathrin Kucharski
1992	Kathleen Gauthier
1991	Beverly Yachmetz
1990	Gary Magnus
1989	Ilene Zuckerman
1988	Brian Sanderoff
1987	Thomas Williams

2000 Distinquished Young
Pharmacists Award
Lynette Bradley

Wyeth-Ayerst Bowl of Hygeia Award

***About the Award*:**
The Bowl of Hygeia recognizes a pharmacist who has performed outstanding services to the community in any area, with a particular emphasis on non-pharmacy contributions. The recipient receives a plaque, a lapel pin, and a trip to meet with other Bowl of Hygeia recipients.

***Who is Eligible*:**
Any Maryland pharmacist who is a MPhA member and has not already received the Bowl of Hygeia.

***Past Honorees*:**

1999	Lance Berkowitz
1998	Mayer Handelman
1997	Melvin Rubin
1996	Nicholas Lykos
1995	Dennis Hager
1994	Ernest Gregg
1993	James Rutten
1992	Robert Martin, Sr.
1991	Irving Fink
1990	Jerome Fine
1989	Bennett Bozman
1988	Marvin Oed
1987	Oscar Schapiro
1986	Ronald Proudfoot
1985	Marvin Freedenberg
1984	Philip Cogan
1983	Nathan Schwartz
1982	Samuel Goldstein
1981	James Gudling
1980	Donald Fedder
1979	Paul Freiman
1978	Henry Seidman
1977	Joseph Dorsch
1976	S. Ben Friedman
1975	Anthony Padussis
1974	James Truitt, Jr.
1973	Paul Reznek
1972	Morris Bookoff
1971	Charles Spigelmire
1970	I. Earl Kerpelman
1969	Clinton Englander
1968	Victor Morgenroth
1967	Harold Goldfeder
1966	Gordon Mouat
1965	Norman Levin
1964	Simon Solomon

2000 Bowl of Hygeia Award
Jeffrey Sherr

Seidman Distinguished Achievement Award

***About the Award*:**
Created to honor the major impact on Maryland pharmacy by Henry Seidman, this award is presented for outstanding service by a Maryland pharmacist to the pharmacy profession during either the past year or over a period of years. The recipient receives a plaque and clock.

***Who is Eligible*:**
Any MPhA pharmacist member who meets the criteria of the award.

***Past Honorees*:**

1999	Leonard DeMino
1998	James Miller
1997	Elwin Alpern
1996	Milton Moskowitz
1995	Ralph Shangraw
1994	Ronald Sanford
1993	Peter Lamy
1992	Ralph Quarles
1991	Milton Moskowitz
1990	Milton Sappe (posthumous)
1989	Mayer Handelman
1988	Donald Fedder
1987	Charles Spigelmire
1986	Bernard Lachman
1985	Frank Block
1984	Paul Freiman
1983	Charles Spigelmire
1982	Morris Cooper
1981	Melvin Rubin
1980	Henry Seidman (posthumous)

2000 Seidman Distinquished
Achievement Award
George C. Voxakis

Dupont Innovative Practice Award

About the Award:
Established in 1993, this award aims to recognize forward-thinking pharmacists who have expanded their practices into new areas. This may include adding a new service, restructuring a pharmacy and its current services, or developing a completely new practice. The award recipient receives a plaque, a medal, and a framed water-color sketch.

Who is Eligible:
Any MPhA pharmacist member who meets the criteria of the award.

Past Honorees:

1999	Magaly Rodrigues de Bittner
1998	Leo Mallard
1997	Douglas Campbell
1996	Mark Levi
1995	Irwin Rosenberg
1994	Philip P. Weiner
1993	Beverly Yachmetz

2000 Dupont Innovative Practice Award
Robert W. Henderson

Murhl Flowers is presented with the Incoming President's Award

Joe DeMino is presented with the Outgoing President's Award

Joe Marracco is presented with the Outgoing Speakers Award

Jack Peters is presented with the Honorary Presidents Award

Quelling Nausea with Ginger

Time for Ginger?

Counseling Guide for Pharmacists

Ginger (*Zangiber officinale*) has been used as a spice and a medicinal herb for nearly 2,500 years. Most people know ginger for its exotic flavor but the herb is also used to aid digestion, quell nausea, and prevent vomiting.

The Chinese call it *Gan Jiang* and attribute to ginger an array of special healing powers, including aphrodisiac effects. While the latter has never been proved, ginger has been shown to inhibit prostaglandin and leukotriene synthesis, which may explain its use by some as an anti-inflammatory agent.

Drawing by C. H. Wooley, Point Reyes, CA

Like garlic and onions, ginger inhibits platelet aggregation and may help reduce serum cholesterol levels. Because of its positive inotropic and chronotropic effects (demonstrated in animals), ginger may be useful as a cardiotonic agent.

The Complete German Commission E Monographs include ginger in the approved category, noting its activity as "antiemetic, cholagogue, promoting the secretion of saliva and gastric juices, and positively inotropic." They specify its use for dyspepsia and the prevention of motion sickness, but exclude use during pregnancy for morning sickness.

Thus, although some people advocate using ginger to alleviate morning sickness, it would be prudent to review the literature carefully before recommending ginger for this purpose.

The prevention of motion sickness, on the other hand, is an excellent application for ginger. Studies in motion sickness have yielded mixed results, but a CNS effect has been ruled out, leading to the conclusion that the effects of ginger are primarily gastrointestinal. For best results, about 1 gram of powdered ginger should be taken *four hours before* travel.

Additionally, hot compresses of fresh grated ginger help stimulate circulation and draw out toxins. And hot baths with fresh or powdered ginger can induce sweating and help eliminate toxins.

While ginger has minimal side effects, eating large quantities may give some people an upset stomach.

Pharmacists should fee comfortable recommending ginger for minor digestive complaints—with the caveat, of course, that patients consult their doctor if symptoms persist.

For more information, contact The American Botanical Council (512-331-8868) or the Herb Research Foundation (800-748-2617).

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Interactions...

Improving Academic Communication with Technology

Cynthia J. Boyle, Pharm.D.
Richard E. Rumrill, M.S., FASHP

For those of you who are concerned that pharmacy students receive sufficient experiential training prior to graduation, you can be assured that one-fourth of the curriculum at the University of Maryland School of Pharmacy is devoted to such training. The Office of Experiential Learning is responsible for this practical training of the Doctor of Pharmacy students. The office consists of two faculty members, a Director and an Assistant Director of Experiential Learning, and two staff members, a Coordinator and an Administrative Assistant. Coursemasters are assigned to each of the program's courses to develop syllabi and to assign grades while preceptors work directly with the individual students on rotation.

The entry-level program consists of six Phases with nineteen experiential learning assignments per student over the four-year academic program that builds upon a minimum of sixty-three credit hours of college prerequisites. The nontraditional program includes two experiential learning rotations away from the student's practice site at the conclusion of the program. Approximately 400 practitioners, who have clinical faculty appointments with the School of Pharmacy, precept 400 entry-level and about 50 nontraditional students annually at more than 200 practice sites. These faculty members are identified to precept specific Phases and/or electives based upon their practice sites and areas of expertise.

With this many factors involved in scheduling students for experiential rotations, the need for technological assistance has increased. There are other developments, as well. Beginning in the fall of 2001, all the students will own laptop computers. With a UMnet account, preceptors not only have access to internet-based university healthcare databases but also to email which is accessed at the local library, at work, or at home. The Computing and Network Services Department at the school has recruited an excellent staff, including a webmanager. A new faculty position for the Director of Educational Technology is being developed with responsibility to coordinate academic technology efforts to enhance education. Improved use of technology will position the University of Maryland School of Pharmacy to better serve students, preceptors, and practitioners within the profession.

Over the past year, several communication tools, electronic and otherwise, have been implemented or are being developed.

Website: If you have not visited the website for the School of Pharmacy lately, you will be pleased with the information which can be found there and the ease of use. At www. pharmacy. umaryland.edu, the master calendar of events is posted so that, if your schedule allows, you can take advantage of one of the endowed lectures to hear a renowned expert in pharmacy, science, or healthcare. Within the Experiential Learning Program can be found a calendar of upcoming training/continuing education sessions or focus groups, forms and syllabi for the various courses, newsletters, many policies such as campus immunization requirements and confidentiality agreements, a preceptor application form, and an email address (elp@rx.umaryland. edu).

Computer-enHAnced Rotation Management System (CHARMS): By partnering with a former graduate who is now on the faculty at the University of Mississippi, the Office of Experiential Learning will soon launch a new database to better assist students and preceptors. Instead of basing their rotation selections primarily upon word-of-mouth recommendations and addresses, students will know site services, housing availability, public transportation services, and special site requirements as they construct their experiential academic plan of study. Preceptors will be able to easily confirm upcoming assignments and communicate with other preceptors with similar responsibilities.

Preceptor Training: Now with a full complement of people, the Office of Experiential Learning, with coursemaster support, has resumed preceptor training. At new preceptor seminars, which are scheduled twice in the fall and twice in the spring, a variety of practitioners, involved with rotations from initial experiences to specialized electives, have discussed the roles and responsibilities of preceptors and the challenges of teaching and mentoring students. At Phase IV recitation sessions during students' final year of the program, preceptors have not only learned about assessment, but have significantly contributed to the case presentation discussions with their practice experiences and professional judgment. Also, training sessions have been held at meetings of preceptors within a particular company. These can be scheduled upon request for any interested group of practitioners.

There remain many plans and goals for improved use of communication technology within the Experiential Learning Program. Coursemasters will be able to hold asynchronous case or practice discussions on-line while students are at various practice sites to increase students' participation and to increase students' exposure to practice issues. Training and continuing education will be available in a distance format to improve access and convenience for pharmacists. By moving from reliance on mailed forms to electronic rotation scheduling, the Office of Experiential Learning will be able to decrease the lead-time for assignments.

MPhA members and other pharmacists, who are not preceptors or Maryland alumni, certainly contribute to pharmaceutical education within the state and will continue to be included in communication strategies. Students routinely rotate through the association's headquarters and participate in association activities with MPhA members. Pharmacists serve students as mentors, either informally or through an established mechanism such as the Mentorship Program through the Office of External Affairs at the School of Pharmacy. Pharmacist colleagues of preceptors routinely share their expertise with students who rotate through their practice settings. Corporate partners offer scholarships and support for major projects from residency funding to practice lab improvements. Practitioners serve on the Educational Advisory Committee of the school to help guide the academic content toward relevance in contemporary pharmacy practice.

The goal of experiential learning remains to develop in each student the professional judgment and competencies needed to skillfully perform the functions of the contemporary pharmacist in a broad range of environments. However, with the ever-expanding roles of pharmacists and demands within health-care, the methods and activities of experiential teaching will need to adapt to optimally prepare future pharmacists for practice. Your many efforts, ideas, and support are essential ingredients in the process.

Richard and Cynthia serve as Director and Assistant Director of Experiential Learning and as Assistant Professors of Pharmacy Practice and Science at the University of Maryland School of Pharmacy.

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Irritable Bowel Syndrome

IBS: Q&A About New Therapeutic Approaches

Angela Lotz
UMB, Pharm.D Candidate

A new drug has been approved for irritable bowel syndrome (IBS). IBS is a common functional gastrointestinal disorder. Lotronex (alosetron hydrochloride, GlaxoWellcome) is a potent and selective 5-HT3 receptor antagonist.[1] 5-HT3 receptors are nonselective cation channels that are extensively distributed on the enteric neurons in the GI tract (in addition to other peripheral and central locations). Activation of these channels affect the regulation of visceral pain, colonic transit, and GI secretions. The 5-HT3 receptor antagonist inhibits the activation of non-selective cation channels resulting in modulation of the enteric nervous system. By blocking the action of serotonin on the intestinal system, Lotronex will reduce cramping abdominal pain, abdominal discomfort, urgency, and diarrhea caused by IBS.

In addition to Lotronex, another new drug should be coming to the market soon. The drug is Zelmac (tegaserod, Novartis) and may improve symptoms of IBS patients suffering from abdominal pain and constipation.[2] Zelmac selectively targets and acts on the 5-HT4 receptors in the GI tract. These receptors play a role in pain perception and GI motility.

Pharmacists in a community pharmacy are in a position to advise the patient that frequently purchases OTC remedies for diarrhea and/or constipation to talk to their doctor about these drugs. Pharmacists in any setting should be up to date on the new approach to treating the symptoms of IBS in order to advise physicians and patients. The following are some questions that you may encounter.

What is IBS?

Irritable Bowel Syndrome is defined as lower abdominal pain, disturbed defecation or irregular bowel function (diarrhea and/or constipation), and bloating in patients that have not been diagnosed with an abnormality that might explain these symptoms (i.e. structural abnormality, lactase deficiency, infection, Crohn's disease).[3] Other accompanying symptoms may include gas, bloating, heartburn, tiredness, depression, anxiety, and irritability.

How is IBS diagnosed?

Symptom-based criteria are used to diagnose IBS since there is no structural, biochemical, or physiological diagnostic marker for the condition. In addition to symptomology, both a complete history and physical examination are necessary in order to rule out another possible etiology. Patients that are diagnosed with IBS have had recurrent or continuous symptoms for at least 3 months. IBS patients have abdominal pain that is relieved with defecation and/or associated with a change in frequency or consistency of stool. In addition, sufferers of IBS have two or more of the following at least 25% of the time: altered stool frequency, altered stool form, altered stool passage, passage of mucus, or bloating or feeling of abdominal distension (as reviewed in Drossman).[3]

If I have IBS, are there factors that may precipitate or worsen the symptoms?

Possible reasons that IBS symptoms may become more frequent may include new exacerbating factors such as dietary changes, side effects of a new medication, or laxative or narcotic abuse. Personal worry, environmental stressors, or depression may play a role as well.

What can I take to relieve the symptoms associated with IBS?

Before starting any therapy, patients should consult with their physician. Fiber is indicated in patients with constipation-predominant IBS. Loperamide is beneficial in patients with diarrhea-predominant IBS (best to use sparingly on an as needed basis). IBS associated with depression may be relieved with psychotropic agents. Therapy as such is reported to be moderately successful as reviewed in Camilleri.[4] New pharmacological approaches have been taken resulting in new drug therapy.

What is the new drug for IBS?

The new drug is Lotronex (alosetron hydrochloride, GlaxoWellcome). The drug's proposed mechanism of action involves blocking the effects of a chemical called serotonin that may be causing the intestinal system to be overactive.

Who should take Lotronex?

Lotronex is indicated for the treatment of IBS in women. Lotronex should be prescribed for women with diarrhea as the predominant bowel symptom.

Will Lotronex really help to relieve IBS symptoms in women with predominantly diarrhea?

In the clinical trials conducted, women who received Lotronex reported a significant decrease in the percentage of days with urgency as compared to those who received placebo treatment.[1] It is reported that significant improvement in symptoms was noticed within one week of starting the therapy. Symptom improvement persisted for the duration of the 12 week trial.

Why isn't Lotronex indicated for men with IBS?

The safety and effectiveness of Lotronex in men have not been established.

Are there any side effects associated with taking Lotronex?

The most frequent adverse event reported was mild to moderate constipation transient in nature. Approximately 25% of the patients taking Lotronex 1 mg twice daily during the clinical trial reported constipation. You should discuss other possible adverse events and drug interactions with your health care provider or pharmacist.

If you see blood in your stool or if you experience sudden worsening of abdominal pain contact your doctor right away as these symptoms may be a sign of a serious medical condition.

Are there any drug interactions with Lotronex?

You should talk with your pharmacist about all the medications that you are taking before starting Lotronex therapy. However, during clinical trials patients taking Lotronex reported taking fiber supplements, antidiarrheals, laxatives, antidepressants, anxiolytics, and anticholinergics with no drug interactions.[1] Studies are currently being conducted on the combination of Lotronex with other commonly prescribed medications.

How do I take Lotronex?

Take Lotronex as your doctor prescribes it. The recommended adult dosage is Lotronex 1 mg taken orally twice daily with or without food. (No dosage adjustment is recommended for elderly patients.) If you miss a dose, do not double the next dose. Instead, continue with the scheduled dosing.

Are there any other new drugs other than Lotronex available?

Another new drug may be coming to the market soon. The name of the drug is Zelmac (tegaserod, Novartis). Zelmac may improve constipation-predominant IBS.

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Continuing Education for Pharmacists

Volume XVII, No. 4

Patient Counseling: Urinary Incontinence

Thomas A. Gossel, R.Ph., Ph.D.,
Dean, and Professor of
Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

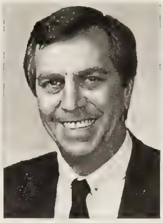
J. Richard Wuest, R.Ph.,
Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals. The goals of this lesson are to describe the major types of incontinence and discuss the medical treatment.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. identify the physiologic processes involved in urination;
2. recognize the major types of incontinence and their causes;
3. choose from a list, drugs and other therapeutic measures that are used to treat incontinence; and,
4. demonstrate an understanding on how to counsel patients on incontinence.

Gossel



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Urinary incontinence is defined as a loss of bladder control. Degrees of loss range from *slight* (involuntary leakage of a few drops), to *partial* (moderate to heavy loss), to *total* (complete, involuntary bladder emptying). Incontinence is not a disease entity as such, but a symptom with numerous causes.

Provided As a Service to the Profession Through an Educational Grant-in-aid from

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It is estimated that approximately 17 million people in the U.S. are incontinent. The true number may be higher since it is believed that many people are too embarrassed to discuss the problem. Incontinence is sometimes referred to as the "silent symptom" or "closet disease."

Incontinence affects women more often than men. No age is spared, but it is most common in persons over 65.

The elderly may be affected more seriously, physically and socially. Incontinence is often the primary reason for institutionalizing an elderly individual. Incontinence is said to be the fifth leading cause of admission to long-term care facilities. Nearly one-half of nursing home residents are incontinent.

Control of Urinary Function

Figure 1 illustrates the human urinary tract. Urine formed in the kidneys drains through the ureters into the bladder for storage until it is voided. Approximately 250mL normally collects before intravesical (within the bladder) pressure increases sufficiently to cause the urge to void. Urination results when the detrusor muscle contracts and the internal and external sphincters relax. Urine is expelled outward through the urethra. The shorter urethra of females (about 1.5 inches versus eight to nine inches in males) may help account for their higher incidence of incontinence.

Bladder control is influenced by autonomic innervation via sympathetic and parasympathetic neurons. When the basic physiologic mechanisms are understood, the role of drugs that cause incontinence and those used to treat it may be clarified.

Stimulation via the sympathetic nervous system maintains sphincter constriction to inhibit voiding. Alpha-adrenergic receptors mediate the bladder outlet and urethra, and increase muscle tone. Beta-adrenergic receptors in the bladder body and dome assist in bladder relaxation.

Parasympathetic receptors are found throughout the bladder,

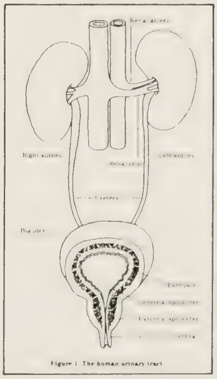

Figure 1. The human urinary tract.

outlet, and urethra. Their stimulation contracts the detrusor muscle and overrides sympathetic tone, thus promoting voiding.

Three forces regulate intravesical pressure; (1) detrusor tone, (2) volume of urine within the bladder, and (3) intra-abdominal pressure. As long as the intravesical pressure is lower than that within the urethra, continence (bladder control) is maintained.

Intraurethral pressure is regulated by three forces: (1) smooth muscle tone in the urethra and bladder neck, and the tone of periurethral striated muscle, (2) thickness of the urethral mucosa, and (3) the intra-abdominal pressure. When intravesical pressure exceeds intraurethral pressure, urine will be voided.

Classification of Incontinence

Incontinence can be subgrouped into five categories.

Stress Incontinence. Accounting for up to one-half of all cases, stress incontinence is more common in women, especially those of childbearing age and older. It may follow events that lower intraurethral pressure below the intravesical pressure. Such events include coughing, sneezing, laughing, bending, or lifting heavy objects. A small quantity of urine (up to 15mL or so) may be lost although once urination begins, it may be difficult for some affected individuals to stop it. Other common causes include a shift in the ureterovesical angle, estrogen deficiency, or damaged or altered muscle tone of the external sphincter including deterioration associated with aging, multiple pregnancies, or surgery.

Stress incontinence in men is most often associated with urinary tract infection, chronic inflammation, or after urologic and prostate surgery or radiation therapy. Signs that suggest stress incontinence (in contrast with urge incontinence) include a lack of nocturia (nighttime urination), and urine loss associated with coughing, straining, or laughing. Psychological or emotional tension or stress are not considered to be predisposing factors, although some women state that anxiety or nervousness makes their condition worse.

Urge Incontinence. A sudden and uninhibited contraction of the bladder, urge incontinence is commonly reported in the elderly. The entire bladder contents are emptied, often with explosive force.

Central nervous system pathology including intracranial tumors, cerebrovascular accident, lobotomy, multiple sclerosis, and hydrocephalus (abnormal accumulation of fluid within the cranium) are reported causes. Patients with Parkinson's disease or Alzheimer's disease may experience urge incontinence. Other causes include peripheral conditions such as uterine prolapse, tumors, fecal impaction, infection, inflammation, prostatic hyperplasia, or formation of scar tissue following surgery.

An important cause of urge incontinence is *deconditioning* the reflex to void which can occur over time, for example, following a period of incontinence. A person may become so anxious about the threat of incontinence that he voluntarily voids often. The resulting low bladder volume gradually decreases detrusor tone and thickness, which in turn, exacerbates the problem.

Signs that suggest urge incontinence include a sudden necessity to urinate, frequent voiding, small volume, and nocturia.

Overflow (Paradoxical) Incontinence. Overflow incontinence occurs when the intravesical pressure exceeds intraurethral pressure only at exceptionally high bladder volume. This is in contrast to urge and stress incontinence, conditions where the bladder may not be filled. This condition results in spilling of small amounts of urine from a full bladder, while the former can occur at any time. The term *paradoxical* refers to the early stages of the disorder, when it may actually be difficult to void.

Bladder outlet obstruction, impaired sensory input, weakened detrusor muscle, enlarged prostate, multiple sclerosis, and spinal cord injury are common causes. Typically, overflow incontinence is present when the person has tenderness above the pelvic area or reduced urine flow with each voiding.

Functional Incontinence. Not a disorder of the bladder as such, this is a *function* of events or factors that keep people from getting to a bathroom in time. Intravesical pressure increases to the point where urine leakage occurs.

Such patients may have physical limitations such as severe arthritis or muscle weakness, be confined to a bed or wheelchair, or may have psychological problems that prevent them from following normal toilet habits. Or, they may be depressed, or angered at other persons or with their environment. Their inattention to the normal urge to void is their way of displaying anger, resentment, or other emotional traits.

Iatrogenic Incontinence. A number of drugs such as diuretics, muscle relaxants, sympathetic blockers, and many psychoactive and neuroleptic agents can cause iatrogenic (i.e., physician initiated) incontinence. Anticholinergics and antihistamines can cause overflow incontinence because they lead to urinary retention.

Iatrogenic incontinence is best treated by modifying drug therapy to eliminate the offending cause.

Management of Incontinence

Drugs employed in management are summarized in Table 1. Urinary tract antispasmodics that are officially indicated for use in treating incontinence are listed in Table 2. Thirty percent of causes are reported to be treatable, and most of the others are manageable. Urge and stress incontinence are the most difficult to treat. Incontinence

Table 1
Drugs Used to Treat Urinary Incontinence

Class	Action	Adverse Effects
Cholinergics *Bethanechol*	increase intravesical pressure in the hypotonic bladder	salivation, flushing, abdominal cramps, diarrhea, sweating
Anticholinergics *Hyoscyamine* *Tolterodine*	decrease activity in hypertonic bladder; used in urge incontinence, especially in neurologic impairment	dry mouth, blurred vision, constipation, restlessness, euphoria, fatigue, inhibited sweating
Antispasmodics *Flavoxate* *Oxybutynin*	directly depress smooth muscle activity; produce local anesthesia	same as anticholinergics, but to a lesser degree
α-adrenergic Stimulants *Phenylpropanolamine*	stimulate urethral sphincter resistance; sometimes effective in stress incontinence	epigastric distress, nervousness, palpitations, cardiac arrythmias, insomnia
α-adrenergic Blockers *Terazosin* *Prazosin*	reduce urethral sphincter resistance; occasionally used to treat overflow incontinence; may be combined with bethanecol to increase bladder pressure and decrease outlet pressure	orthostatic hypotension, loss of ejaculatory function, nasal congestion, miosis, tachycardia
Miscellaneous		
Estrogen	•increase sensitivity to alpha stimulation	•nausea, increased risk of endometrial cancer
Benzodiazepines	•relax detrusor and bladder sphincter; used in overflow incontinence	•sedation, sleepiness, GI irritation, possible confusion in elderly
Imipramine	•provides alpha-adrenergic stimulation and anticholinergic activity	•dry mouth and eyes, bladder obstruction in men with enlarged prostate

remains a complex problem overall and is increasing with the greying of America.

Stress Incontinence. Treatment is directed toward improvement of sphincter function. Drugs with anticholinergic activity and alpha-adrenergic stimulants, can achieve this goal. Beta-adrenergic blockers promote greater bladder filling. Estrogens improve alpha-adrenergic receptor sensitivity to stimulation in women. Estrogen therapy may be all that is required to manage stress incontinence in some women.

Use of a pessary (a device placed intravaginally to support the uterus; commonly a donut-shaped ring) by women, or surgery to restore the normal ureterovesical angle may relieve the problem. These support the pelvic muscle, thereby increasing its resistance against intravesicular pressure and loss of urine. Men may also benefit from surgery when incontinence is caused by tumors of the bladder, or other abnormal growths within the urethral canal.

Urge Incontinence. Effective treatment is directed toward blocking detrusor contraction. Anticholinergics, antispasmodics, and calcium channel blockers may be helpful. Surgery may be performed to remove tumors, or correct an enlarged prostate gland or prolapsed uterus when conditions necessitate.

Urge incontinence can be reversible in younger children. It may be reversible in older adults, but not usually.

Overflow Incontinence. Muscle relaxants such as benzodiazepines help relax detrusor and outlet resistance. Alpha-adrenergic blockers may help decrease internal sphincter tone. Cholinergic stimulants such as bethanechol may increase intravesicular pressure and promote a more normal voiding pattern. These agents have limited usefulness in elderly persons, because of inherent toxicity. Surgery is therapeutic if obstruction, such as an enlarged prostate, is the cause of reduced outflow.

The primary complication of overflow incontinence is hydronephrosis (distention of the pelvis and calices [cavities] of the kidney, with accompanying destruction). Intermittent self-catheterization can be effective. Once the technique is mastered, patients may perform this every two to four hours to release urine and prevent its back-flow into the kidneys.

Functional Incontinence. There is no direct drug treatment for functional incontinence. Alleviation of underlying psychological causes with appropriate medication may help. These persons can chart their urine voiding patterns. Once a pattern is developed, it can then be anticipated when urination is most likely to occur, and appropriate steps undertaken. Absorbent undergarments, or catheterization of non-ambulatory patients may also be appropriate.

Tolterodine (Detrol; Pharmacia & Upjohn) was the first new drug approved for control of overactive bladder in 20 years. The drug is classed as a muscarinic receptor antagonist.

Tolterodine and its active metabolite show selective binding activity on muscarinic sites in the bladder. Adverse effects reported include dry mouth, dyspepsia, constipation, headache, and dry eyes. It is contraindicated in patients with urinary or gastric retention or uncontrolled narrow-angle glaucoma.

The drug is approved for "the treatment of patients with an overactive bladder with symptoms of urinary frequency, urgency, or urge incontinence." The recommended initial dosage is 2mg twice daily, and lowered to 1mg twice daily if possible.

Incontinence Products. A wide range of disposable undergar-

Table 2
Commercially Available Urinary Tract Antispasmodics

Generic Name/ Trade Name	Dosage Form(s)	Approved Indication
Flavoxate/Urispas	100mg tablet	symptomatic relief of dysuria, urgency, nocturia, suprapubic pain, frequency, and incontinence as may occur in cystitis, prostatitis, urethrocystitis/urethrotrigonitis
Oxybutynin/Ditropan	5mg tablet 5mg/5mL syrup 10mg extended-release tablet	relief of symptoms associated with voiding in patients with uninhibited neurogenic and reflux neurogenic bladder
Tolterodine/Detrol	1mg, 2mg tablets	treatment of overactive bladder symptoms of urinary frequency, urgency, or urge incontinence

ments, diapers, and shields for ambulatory and non-ambulatory patients are available. Composed of light-weight, highly absorbent, non-allergenic materials, these items are comfortable for most patients, and easy to dispose of. Shields of similar construction that are worn inside traditional undergarments are intended for less serious incontinence problems.

Men may choose a condom-catheter (Texas Catheters). These envelop the penis in the same manner as a regular condom and are held in place with adhesive. These devices are longer than the flaccid penis and either have a clamp to retain urine flow until it can be disposed of properly, or are connected to a urinary drainage bag. As an alternative, traditional condoms may work just as well if urine loss is minimal, such as with stress incontinence.

Self-catheterization is quite effective and safe in many persons with overflow incontinence. Typically, a catheter is inserted every two to four hours. This permits whatever urine that has accumulated in the bladder to drain into the proper receptacle.

Indwelling catheterization is usually considered a last resort for treatment of incontinence, even for bedridden patients. Indwelling catheters can serve as a source of irritation and infection.

Odor Management. Incontinent patients must adhere to strict hygienic measures. The presence of urine can be a cause of foul odors. Skin macerated with urine can colonize bacteria and fungi, leading to serious pathology. Various topically applied barrier products are available to protect the skin against the damaging effect of urine. They also cleanse the skin without the drying action of soap.

Exercises. Incontinent men and women can often improve control of incontinence through a series of exercises designed to increase the tone of the pubococcygeus muscle which controls urine flow. These "Kegal exercises" were originally developed to aid women after childbirth. The muscle can be identified by voluntarily stopping and starting urine flow during voiding. A typical program includes 10 to 15 tightening/relaxing episodes three times a day. Benefit is reportedly seen in three weeks, but more likely in about three months.

Counseling Tips

It is important to listen carefully and empathetically, advise properly, and maintain a complete inventory of incontinence products.

Incontinence can be worsened by constipation. Constipation may be exacerbated because some persons believe they should limit their intake of fluid. A high-fiber, high-bulk diet with adequate fluid intake will be helpful.

Weight reduction of 5 to 10 percent of the body weight can alleviate intra-abdominal pressure sufficiently to relieve incontinence.

Caffeine-containing beverages and alcohol have diuretic activity. These should be limited, or eliminated entirely. Some foods which may cause diuresis include chocolate, highly spiced foods, sugar, tomato, honey, and milk. An individual may want to selectively eliminate one or all of these items from the diet to see if the condition improves.

While some OTC products, such as antihistamines with strong anticholinergic action, or decongestants with alpha-adrenergic activity may cause urinary retention, incontinent patients should be dissuaded from such self-treatment until they have been evaluated by a physician. Both drug groups can cause severe adverse effects, especially in elderly persons, and may be contraindicated. Moreover, drugs that treat one type of incontinence (e.g., urge) can worsen other types (e.g., overflow).

OTC artificial saliva and artificial tear products can be recommended for persons taking prescribed drugs that have anticholinergic activity and therefore dry the mouth and eyes. These products may increase compliance with prescribed medication regimens in such patients.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Urinary Incontinence." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 4/15/02. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-99-004-H01.

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The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. All of the following statements about incontinence are true EXCEPT:
   a. incontinence affects women more than men.
   b. incontinence occurs in fewer than 20 percent of nursing home residents.
   c. incontinence is most common in persons over 65 years of age.
   d. incontinence is said to be the fifth leading cause of admission to long term care facilities.

2. Urination occurs when the:
   a. detrusor muscle contracts and bladder sphincters relax.
   b. detrusor muscle relaxes and bladder sphincters relax.
   c. detrusor muscle contracts and bladder sphincters contract.
   d. detrusor muscle relaxes and bladder sphincters contract.

3. Which of the following statements is true?
   a. Alpha-adrenergic receptors in the bladder body and dome assist in bladder relaxation.
   b. Beta-adrenergic receptors mediate the bladder outlet and urethra.
   c. Stimulation via the parasympathetic receptors relaxes the detrusor muscle and inhibits voiding.
   d. Stimulation via the sympathetic nervous system maintains sphincter constriction to inhibit voiding.

4. The forces that regulate intravesical pressure include all of the following EXCEPT:
   a. volume of urine within the bladder.
   b. detrusor tone.
   c. thickness of urethral mucosa.
   d. intra-abdominal pressure.

5. Urine will be voided from the bladder when:
   a. intraurethral pressure exceeds intravesicular pressure.
   b. intraurethral pressure equals intravesicular pressure.
   c. intravesicular pressure exceeds intraurethral pressure.
   d. intravesicular pressure equals intraurethral pressure.

6. A sudden and uninhibited contraction of the bladder whereby the entire bladder contents are emptied often, with explosive force, is called:
   a. iatrogenic incontinence.
   b. overflow incontinence.
   c. stress incontinence.
   d. urge incontinence.

7. The type of drugs that are most likely to cause overflow incontinence are the:
   a. antihistamines.
   b. diuretics.
   c. muscle relaxants.
   d. sympathetic blockers.

8. Tolterodine alleviates overactive bladder by antagonizing which of the following receptors?
   a. Alpha-adrenergic
   b. Beta-adrenergic
   c. Muscarinic
   d. Nicotinic

9. Which is the LEAST appropriate advice for incontinent patients?
   a. Reduce your body weight.
   b. Increase your fiber intake.
   c. Maintain adequate fluid intake.
   d. Increase your caffeine intake.

10. The type of drug that directly depresses smooth muscle activity in the urinary tract and produces local anesthesia is a(n):
   a. cholinergic.
   b. antispasmodic.
   c. benzodiazepine.
   d. sympathomimetic.

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Pharmacist Licensure Examination

For the results of the June 2000 Pharmacist Licensure examination visit the Maryland Board of Pharmacy's website at: ***www.dhmh. state.md.us/ pharmacyboard/pharmlic/0600rost .htm***. The results are as of August 18, 2000 and are updated every Friday.

Editors Note:
A tongue-in-cheek history of the Wedgwood Club appeared in the last issue of the Maryland Pharmacist. It was not expected to be taken seriously. Apologies are extended to anyone who was offended.

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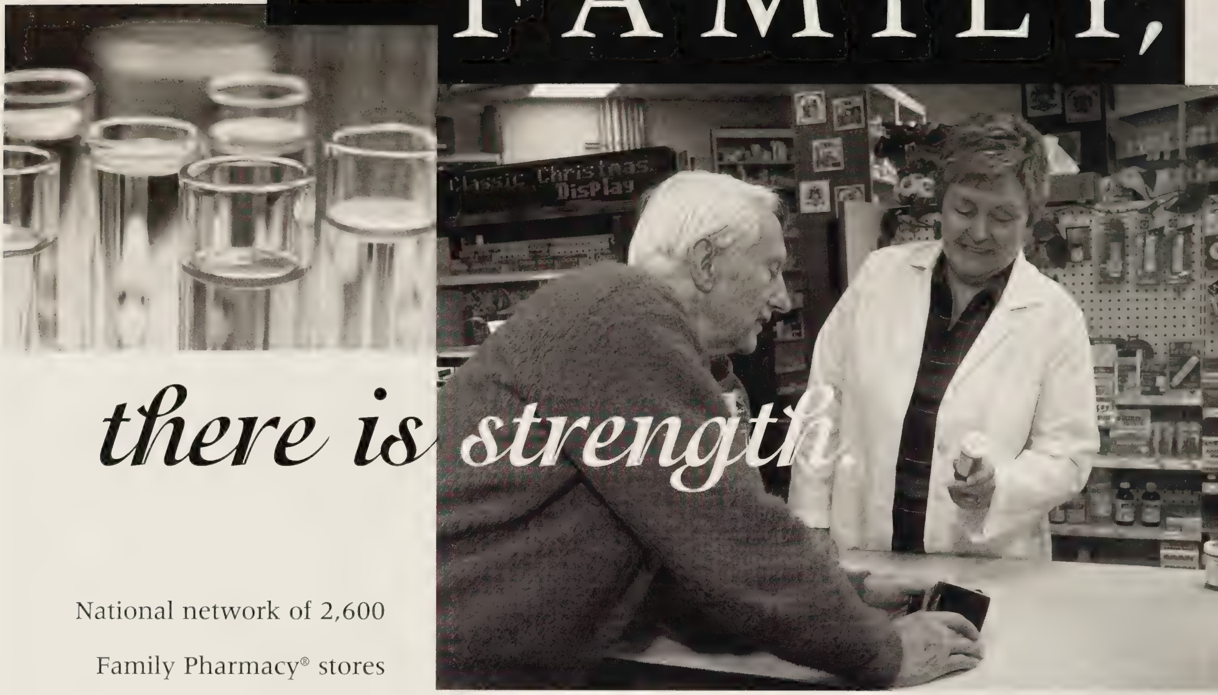

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Murhl Flowers, P.D.
President

President's Commentary

"What is Your Pharmacy Profession Worth to You?"

There are many reasons why each of us chose pharmacy as a career. Do you remember your thoughts when you finally graduated from Pharmacy School? I know there were many, but I also know one thought that was prevalent in the minds of the majority of us—"***I am going to make some positive changes in pharmacy***. Has this thought become reality during your career?

Over my 34-year career, which has included hospital, independent ownership and chain pharmacy, I have seen and experienced a myriad of changes.

- Dramatic increase in Managed Care
- Phenomenal technological advances
- Role of the pharmacist from product-oriented to information-oriented
- Expansion of practice to include drug therapy management and immunizations, in many states, but not Maryland
- Mail order pharmacies
- Internet pharmacies
- Expansion of the role of non-pharmacist ancillary personnel
- Implementation of the entry level Pharm.D.
- Shortage of pharmacists
- Tremendous salary increases
- Unbelievable decrease in retail pharmacy margins
- Dramatic increase in prescription volume
- Increased stress in the workplace environment

However, some things have not changed or have not changed in the magnitude needed by pharmacy.

- Most consumers still think that all pharmacists do is takes a product out of one bottle and put it in another.
- Many physicians still do not understand and accept that pharmacists, working in collaboration with them, can produce more positive patient outcomes in managing specific disease states.
- National pharmacy organizations still cannot seem to get together.
- Government officials and legislators do not understand the contributions to health care that pharmacists can make.
- Managed Care organizations, evidently, think that making a profit in retail pharmacy is a sin.
- Pharmacists continue to provide many services free to their patients.
- Managed care organizations and government agencies continue to unilaterally decrease pharmacy reimbursement rates when they want to decrease costs, instead of looking at manufacturers, where the big saving is.
- Pharmacists remain apathetic about getting involved in order to provide input into the direction their profession should take.

I still think about that thought at graduation about wanting to make positive changes in pharmacy. I still have a passion to be involved in effecting such changes. I am also convinced that there are many Maryland pharmacists who feel exactly the way I do. Do you want to be involved in making the changes necessary to raise Maryland Pharmacy to the next level?

This is a critical time for pharmacy in Maryland. We face some tremendous challenges due to several high profile issues that the legislature is seriously looking at.

- Medication errors.

- Use of non-pharmacist ancillary personnel, i.e. technicians. This issue has been looked at closely for the last two years and remains on the "front burner."
- Drug prices. The legislature is seriously looking at the type of bill that was passed in Maine last year. This legislation is supposed to force drug manufacturers to negotiate lower prices for the citizens of the state. If this is not done within three years, the state can then establish price controls themselves. This is very dangerous legislation and, in the opinion of many, is unconstitutional.

In addition, physicians, along with the legislature, continue to stonewall our efforts to establish drug therapy management programs in collaboration with physicians.

In order to combat all of these challenges, pharmacy must be extremely visible, vocal and present a solid front. It will require the involvement and efforts of all pharmacists to prevent our profession from continuing to be dictated to by outsiders. We must remember that whenever we allow someone else to set our professions standards and regulations, we have given our profession away.

The dedication and commitment of every Maryland pharmacist is being tested. ***Maryland pharmacy needs you—the time is now!!!*** Have you renewed your membership? The investment of $3.36 a week is a tremendous value, especially when you consider what is at stake. Every pharmacist should belong to the association. Encourage your colleagues to give MPhA a try—I am confident that they will be glad they did. If you have already renewed your membership please pass along the membership investment form on page 21 to a colleague or friend. Give them our phone number so they can call the MPhA office at (800) 833-7587, and we'll send them information on membership. Or, they can check our web site @ www.erols.com/mpha. Remember, individually, we can do little but collectively, there are no limitations.

My challenge to each Maryland pharmacist is simple—use your ***courage*** to make that graduation goal become a reality—help make some positive changes in pharmacy in Maryland. ***Is your profession worth your efforts? Absolutely!!***

To our members, Thank You for your loyal support this year!

Happy Holidays to you and your loved ones from The Maryland Pharmacists Association!

This has been an especially exciting year, as we're celebrating our 118th anniversary.

As this year draws to a close, we want to thank you for your continued support. We wouldn't be where we are today without loyal members like you!

We look forward to serving you for many years to come, and we wish you and your family a very healthy, happy and prosperous 2001.

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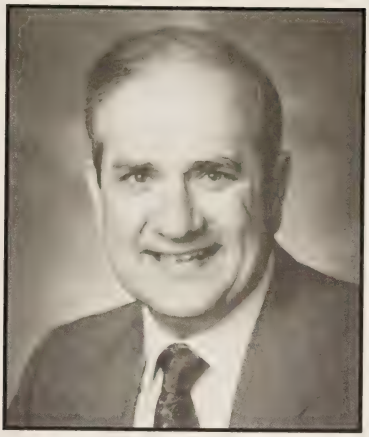

Director's Column

Holding Down the Cost of Prescription Coverage for the Elderly

Howard R. Schiff, P.D.
Executive Director

Prescription coverage for Medicare recipients, was the single largest issue in the recent election. There seems to be universal agreement that some sort of prescription plan for the elderly will be passed and signed by the President within the next year or two. In the meatime however, preliminary meetings of committees from the Maryland General Assembly have focused on reducing the price of prescriptions to seniors. The good news is that the high cost of medications has not been blamed on pharmacists. The bad news is that Maryland pharmacies might still have to pay for it.

The most popular idea to reduce drug costs for the elderly comes from California where, as a condition of being a participant in the Medicaid program, pharmacies must sell prescriptions to Medicare recipients at the Medicaid price. Estimates from local health authorities are that seniors would save approximately 15 percent by this method. My contacts in California say the savings is about 10 percent. What is onerous to pharmacists is that, though it is universally realized that pharmacies are not to blame, the entire burden of reducing costs to seniors rests on the permit holders in Maryland. Granted that something must be done, it is unfair to expect community pharmacies to accept the entire burden. There is no contribution by the State and no rebate from manufacturers and, although a 10 or 15 percent saving is significant to many people, it would not mean a lifestyle change.

As an alternative, pharmacies in Maryland think a better solution would be an expansion of the Maryland Pharmacy Assistance Program (MPAP). To hold down costs, the MPAP has a formulary restricted to medications for anti-infectives and chronic diseases. No life style drugs, shampoos, ointments, or decongestants are included. At the present time, the program has a $5.00 copay and no premiums for residents who do not qualify for Medicaid and have annual household incomes of less than $9,650 for one person and $10,450 for two. These levels as well as copays and premiums could be adjusted to allow higher income Seniors to participate. Importantly, the State, in the form of subsidies, and manufacturers, in the form of rebates to the State, contribute. Pharmacies accept Medicaid reimbursement, seniors would receive a real benefit and pharmacies would not be expected to shoulder the entire burden.

This program would be an interim one requiring the state to spend money until the federal government comes to some agreement on prescription coverage. Of course, the state does not want to spend general revenues. We think it's better than the California plan because it could mean significant savings to seniors, pharmacies would receive only the Medicaid reimbursement, manufacturers would be required to give rebates and the state would supply the balance of the funds for necessary medications. The flaw in the program is its lack of medication management for pharmacists. We all know that medications do no good if not used properly.

What remains to be seen is whether the State is ready to make a serious financial commitment to its seniors at this time.

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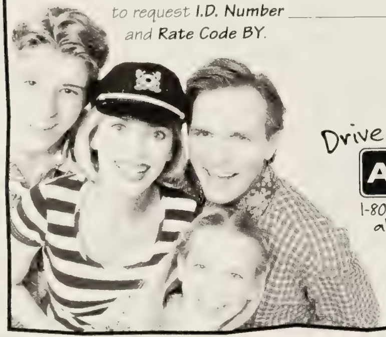

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Kelly Memorial Building

The B. Olive Cole Pharmacy Museum Dedication

B. Olive Cole

The dedication of the B.Olive Cole Pharmacy Museum as written in the Maryland Pharmacist in the May 1966 issue.

Dedication ceremonies for the B. Olive Cole Pharmacy Museum took place May 19 in the Health Sciences Library of the University of Maryland Baltimore Campus. The Museum will encompass exhibition cases in the foyer of the Kelly Memorial Building, home of the Maryland Pharmaceutical Association, and will contain the major portion of the large collection of pharmaceutical artifacts of the late L. Manuel Hendler.

Miss Cole, known as "First Lady of Pharmacy in Maryland," is Professor Emerita of Pharmacy Administration of the University of Maryland School of Pharmacy, the school from which she graduated with the degree of Doctor of Pharmacy in 1913.

The invocation was given by the Rev. W. Edward Neighhoff, Associate Minister of the Hiss Methodist Church and introductions were conducted by the Chairman of the Committee for the Cole Museum and its companion project, the Swain Model Pharmacy, Irving I. Cohen. Mr. Cohen spoke of the inception six years ago of the idea of a pharmacy museum—a focal point for the collection and preservation of the artifacts and memorabilia of pharmacy. He referred to the dispersion and actual loss of such antiques and his concern that this should not happen. From this concern grew the eventual establishment of the Cole Museum. Mr. Cohen made special mention of the contribution of Morris L. Cooper, Curator of the Cole Museum, who did most of the arranging of the exhibits.

Alexander J. Ogrinz, President of the Maryland Pharmaceutical Association, made a brief statement during which he acknowledged the contribution of those who gave of their time and energies to complete the Cole Museum. Greetings were given by Dr. Albin O. Kuhn, Vice President of the University of Maryland Baltimore campus; Dr. Noel E. Foss, Dean of the School of Pharmacy and Dr. Linwood F. Tice, President of the American Pharmaceutical Association and Dean of the Philadelphia College of Pharmacy and Science.

Mr. Cohen then introduced the Executive Secretary of the Maryland Pharmaceutical Association and Secretary of the Baltimore Metropolitan Pharmaceutical Association, Mr. Nathan I. Gruz, under whose surveillance the whole project had proceeded. Mr. Gruz summarized the evolution of the Cole Museum and his special pleasure at its being named for "one of the outstanding personalities in the world of pharmacy." He noted that "Miss Cole occupies a unique niche, not only in Maryland pharmaceutical history, but in American pharmacy." He also acknowledged the many contributions of individuals, particularly by the leadership of Irving I. Cohen, to the project and expressed the appreciation of everyone involved. Mr. Cohen's persistent efforts resulted in the establishment of the museum.

Mr. Gruz then introduced the main speaker of the day, Dr. John C. Krantz, Jr., who delivered the address of tribute to Miss Cole. It was pointed out that Dr. Krantz was Miss Cole's own "first and only choice" in the matter. Dr. Krantz's remarks are also produced in full in the May 1966 issue of the *Maryland Pharmacist*.

Prior to a tour of the Cole Pharmacy Museum and refreshments, Miss Cole took the rostrum to respond to the occasion.

Many letters and telegrams were read from people in other parts of the country who were unable to be present at the dedication but who wished to express their delight and deference to Miss Cole on the occasion of this honor.

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Technology: Friend AND Foe

By Don McGuire, R.Ph., J.D., Attorney, Professional Claims, Pharmacists Mutual Insurance Co.

There has been a lot of emphasis recently on pharmacy dispensing errors and how to prevent them. Many solutions focus on the expanded use of technology; bar codes, scanners, automated counters, and computers in general. While the use of these items has increased in recent years, the rate of mistakes does not seem to be decreasing.

The Pharmacists Mutual Claim Study shows that almost 50% of the claims reported during the last 10 years were the result of the patient receiving the wrong medication. The yearly percentage during that period fluctuates between 42% and almost 61%. Assuming that the use of technology has steadily increased since 1989, the percentage of claims reported due to wrong medication does not show a corresponding decrease.

One possible explanation is that technology has replaced the errors it is meant to eliminate with others. While the use of bar codes and scanners can decrease the chance that the wrong stock bottle is pulled from the shelf, computer entry methods can increase the risk that the wrong drug name is entered in the computer. The use of menu lists and quick codes can cause the wrong product to be selected. For example, the quick code *Ser100* could represent Serzone 100mg or Serentil 100mg. The unwary pharmacist or technician may enter the code expecting to generate a label for one drug and receive a label for a completely different product. Software which gives a menu of items upon entry of the first four letters of the drug name could result in the wrong item being selected because of the difficulty in selecting the desired drug and strength in a long list of possible choices. To combat this, the filling and checking of all new prescriptions should be done using the original prescription, ***not*** the computer generated label.

The importance of getting the prescription entered correctly the first time is more important now than ever. Original prescriptions are no longer pulled and reviewed before recording refills on them. This is now done electronically. In the past, initial errors had the chance of being caught and corrected upon refilling. Pharmacists Mutual has claims on file in which the patient receives the wrong drug refill after refill because this built-in double check no longer occurs. Technology compounds the simple mistake; one month of the wrong medication becomes six months or a year.

Technology can never replace a conscientious pharmacist using his/her best professional judgment.

Automated counters and automated dispensing systems relieve much of the tedium of counting tablets and capsules. Over time, there is a natural human tendency to rely on technology and trust that the system is infallible. However, any system which involves humans is not infallible. When automated dispensers are misfilled, instead of one misfilled prescription, there are many misfilled prescriptions. For example, in a hospital setting, a filling mistake could result in every patient supposed to be taking Drug X on the ward receiving Drug Y. Remember the adage, "Garbage in, garbage out." Computer systems are only as reliable as the data entered by its human operators.

Don McGuire, R.Ph., J.D.

Does this mean we should exclude technology as a solution to dispensing errors? No. Used wisely and with the awareness that every output is not necessarily correct, technology can greatly reduce the chance of error. Consider the impact diligent people can have on dispensing errors. Assume the technician entering prescriptions into the computer and filling the prescriptions makes one mistake in every 100 prescriptions. Also, assume the pharmacist performing his/her final check makes one mistake in every 100 prescriptions. Statistically, the chances of both people making a mistake on the same prescription is the product of their chances of making the mistake independently. Instead of one mistake in every 100 prescriptions, the double check reduces this to one mistake in every 10,000 prescriptions.

The value of the double check is unmistakable. Why isn't it more effective in practice? As described earlier, there is a tendency to be lulled into complacency by "infallible" technology. This can also occur when the second checker relies too heavily on the accuracy of the first checker. The pharmacist who knows that the technician he/she is working with is very careful and accurate, may not check their work with a discerning eye. The pharmacist should always be cognizant that a mistake can happen at any time whether through human means or electronic means.

The increased use of technology has freed the pharmacist from the technical tasks of filling prescriptions and provides the pharmacist with more information about patients and their medications than at any time in the past. However, this friend also has the ability to seize upon a small mistake and turn it into a much larger problem.

Technology can never replace a conscientious pharmacist using his/her best professional judgment. Only by working with technology can maximum benefits for your patients be achieved. Technology is the servant of the pharmacist, not the other way around.

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David A. Knapp, PhD, Dean
University of Maryland School of Pharmacy

Interactions...

The Pharmacy Workforce

Growing—But Not Fast Enough

Contrary to popular belief, the number of pharmacists has been growing faster than the population in recent years and is likely to continue doing so for the next decade despite the advent of the doctor of pharmacy program. Aggressive recruitment by schools of pharmacy coupled with the addition of eight new schools will keep the supply of new graduates running ahead of population growth. But the pharmacist shortage is very, very real! Fueled by an extraordinary growth in the years of prescription and OTC products as well as dramatic increases in the sales of vitamins and herbal products, the growth in prescription volume in community pharmacies is accelerating rapidly. Currently about 3 billion prescriptions a year, prescription volume is expected to hit 4 billion as early as 2004.

This has put extreme pressures on the community pharmacy workforce. There are not enough pharmacists to fill all of the available positions. Industry estimates of open positions range between 7-9,000 openings. Federal sources estimate that pharmacists currently in practice are working about 10% more hours per week than they have in the recent past.

Prescription demand in community pharmacy is only part of the story, of course. Increasing medication use is not limited to one practice site. The use of medications is growing everywhere. Several factors are responsible for this growth. First, medications are a preferred form of therapy and more new drugs have reached the market recently. Second, most patients are now covered by third party programs, removing almost all economic barriers to purchasing medications. Third, after the FDA issued relaxed guidelines on direct-to-consumer advertising a few years ago, the pharmaceutical industry has adapted this form of promotion with a vengeance! About $2 billion was spent last year on television and magazine advertising for prescription drugs.

Surprisingly, the aging of the population has not yet had too much to do with increased use of prescription drugs. In fact, federal sources report that only about 4% of the growth in volume that can be attributed to the age factor. But we can predict that it is right around the corner. The baby boom generation will be well into its sixties by the end of this decade and prescription utilization should show another sharp increase. Some form of drug coverage under Medicare will also fuel increases in use.

With increases in medication utilization come many challenges for pharmacists. Dispensing prescriptions is only one of them and yet has already led to major problems in community pharmacies. But with the expanded use of medication also comes the increased potential for medication problems of all sorts. These were characterized in last year's Institute of Medicine study entitled "*To Err Is Human.*" Pharmacists have a major role to play in managing medication therapy to achieve optimal outcomes economically. Therefore, the demand for pharmacists is increasing across the board. Particularly hard hit by the shortage are rural areas and public sector institutions such as the Public Health Service, the VA, and the Indian Health Service.

The Response of the School of Pharmacy

The ability of any school of pharmacy to respond quickly to an increase or a decrease in the demand for its graduates is limited. After all, it takes about five years to recruit a class, educate it, and graduate new pharmacists. In addition, the University of Maryland is limited by space and facilities. We have been at our capacity of 100 students per class for about 15 years. We are stretching to the limit to admit an additional students anticipating the construction of the Pharmacy Hall Addition. This building has been in the works for over a decade. The proposed Pharmacy Hall Addition will include about 45,000 net square feet of usable space, will cost about $31 million and will sit on the parking lot north of Pharmacy Hall. It will be connected at the front of the building through what is now Leavitt Hall. The project is now in the Governor's fiscal year 2005 budget with occupancy scheduled for the end of this decade. The Addition will provide more classroom and laboratory teaching space, additional faculty, resident and graduate student offices, and a larger pharmacy practice lab. When opened, we will consolidate groups now scattered about the campus and the additional space will make it possible to increase significantly our Pharm.D. enrollment.

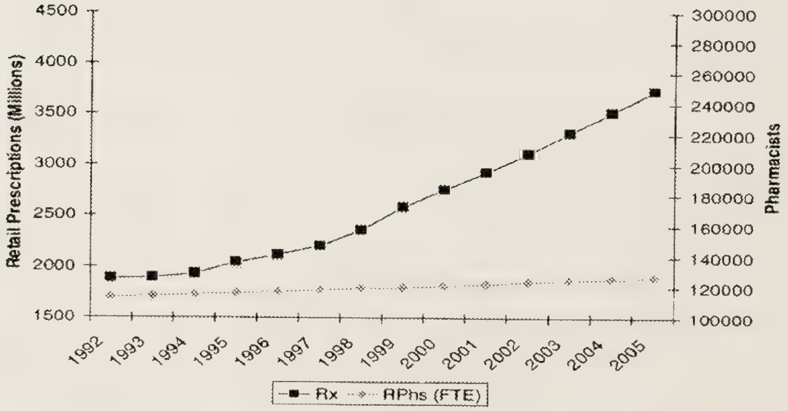
Our immediate goal is to advance state funding. At a minimum, we seek to avoid any further slippage in the schedule for this building which has already been pushed back several times over the last decade. Despite the healthy economic climate, there is tough competition for capital money. We are continuing to make our most compelling arguments for the Pharmacy Hall Addition to the Governor and key legislators.

The School is doing other things in response to workforce issues. We have raised private funds to supplement our own to increase the size of the pharmacy practice laboratory in Pharmacy Hall by over 50%. We are redesigning the facility and are negotiating with a community college to train technicians side-by-side with pharmacy students in the laboratory. In this way, our students will be better prepared to supervise supportive personnel and make full use of them in practice.

Conclusion

While the health professions have always seen swings in supply and demand, the current workforce shortage of pharmacists seems likely to be with us for a while. It is primarily driven by the increased demand for medications, which can only increase with the aging of the population and the coverage of drugs under Medicare. Thus, we face a situation in which the profession of pharmacy is too small to meet the needs of the population. Thus, long-term increases in the supply of pharmacy graduates are necessary. The University of Maryland School of Pharmacy is taking appropriate steps to meet this challenge.

Community Prescriptions and Pharmacists 1992-2005



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Membership Renewal

For your convenience a membership investment form is included in this issue of the *Maryland Pharmacist*. See page 21. Memberships will expire the end of December. Take this opportunity to renew before December 31 and be eligible to ***win a free two-day registration for the Mid-Year Meeting*** valued at $ 150. All members who renew before the deadline will be entered in the drawing. You can charge your dues! Fax It! It's Convenient and Quick! Our fax number is 410-727-2253.

If you have already renewed your membership, please pass the membership investment form along to a friend or colleague who is not currently a member.

Thank you.

Pharm/alert® Notes

Counseling Notes for Pharmacists

Hepatitis A to G

Liver disease is the third leading cause of disease-related death among adults between 25-59 years old. It's prevalence can be attributed, at least in part, to "modern" lifestyle—e.g., rich, fatty and highly processed foods as well as food additives; environmental toxins from motor vehicles and industrial plants; alcohol, tobacco and drug use; contamination during frequent international travel; and multiple sexual contacts.

Viral hepatitis is the most common cause of serious contagious diseases in the United States. At least seven types of viral hepatitis have been identified today:

Hepatitis A. Formerly called infectious hepatitis, it is most commonly seen in children in developing countries, although adults in developed countries also contract it. About one-third of the U.S. population has antibodies to hepatitis A, which is acute and self-limiting, i.e., it does not become chronic. The virus is excreted in feces and transmitted via contaminated food and water as well as via oral, anal and possibly vaginal sex.

Hepatitis B. Formerly called serum hepatitis, it is considered the most prevalent strain of hepatitis, with about 350 million carriers worldwide, and an estimated 1.4 million carriers in the United States. Between 5-10% of patients develop chronic hepatitis; the disease can become chronic without an acute stage. The hepatitis-B virus is found in semen, blood and saliva, and is usually spread by blood transfusion, contaminated needles and sexual contact.

Hepatitis C. Formerly called non-A or B hepatitis, it is present in nearly 4 million Americans. From 10-60% of acute hepatitis-C patients develop the chronic form, which can also occur without manifestations of an acute stage. The virus is spread directly via blood or contaminated needles; sexual and mother-to-child transmission is uncommon.

Hepatitis D. Formerly called delta-hepatitis, it is present mainly in IV drug users who have hepatitis B, but it can also be spread via blood transfusion. Hepatitis D can exist *only* in the presence of hepatitis B, to which it must attach before replicating. It is not certain how many hepatitis-B patients also carry hepatitis D.

Hepatitis E. Formerly called enteric or epidemic non-A or B hepatitis, it is similar to hepatitis A in both its acute status and its means of transmission (i.e., contaminated feces, water or food). Once thought to be rare in the United States, today it is estimated that up to 20% of Americans may be infected.

Hepatitis G and GB. Hepatitis G accounts for about 9% of cases not diagnosed as hepatitis A through E, and is estimated to be present in about 1-2% of American as well as in about 25% of hepatitis-A patients, 32% of patients with hepatitis B, and 20% of those with hepatitis C. Hepatitis GB is a newly discovered virus, although its prevalence, clinical course and prognosis are not yet known.

About 5-10% of patients with chronic hepatitis B, and 10-29% with chronic hepatitis C, eventually develop cirrhosis. Drugs for chronic hepatitis include antiviral agents to reduce viral load, primarily interferons (but the percentage of long-term responders to interferon treatment is small). Lifestyle changes are critical—e.g., proper nutrition, rest, no alcohol, smoking or drugs, moderate exercise. Herbal remedies may also be of benefit (e.g., milk thistle).

For counseling and other information about liver disease, contact the American Liver Foundation at 800-GO-LIVER or http://www.liverfoundation.org.

Send Inquires to: Pharm/alert,
c/o Health Care Marketing Services, Inc.,
P. O. Box AP, Los Altos, CA 94023
650-941-3955 • FAX 650-941-2082.

The Benefits of Membership

Representation on Pharmacy and Healthcare Issues on both a regulatory and legislative level. The unique position of MPhA enables the Association to more effectively assert the position of its members than do national or specialty associations. The MPhA's Executive Director attends every monthly meeting of the Board of Pharmacy, and participates on behalf of MPhA on various committees consisting of pharmacists and other health care professionals. Regulations which affect pharmacists, both directly and indirectly, are influenced through the actions of MPhA and its Legislative Committee. MPhA was actively involved in the revision to the Uniform Prescripton Insurance Card Act, and will continue this involvement throughout the 2001 Legislative Session.

A toll-free hotline (800-833-7587) to answer the practice-related questions of members. Due to the very nature of a professional association, the resources available to MPhA are greater than those available to individual practitioners. If they cannot answer the question or concern based on MPhA's resources, the MPhA staff will try to find the information needed by the member.

Other Services and Programs are available as membership benefits. MPhA members are eligible for discounted registration fees for Association meetings and programs.

Specialized Education and Training, in preparing for pharmacy's future. Year after year, the MPhA Mid-Year Meeting offers up-to-date continuing education which no practicing pharmacist can afford to miss. The Annual Convention is a series of continuing education programs focusing on the issues facing pharmacists. In addition, there is always plenty of time to relax and enjoy. MPhA convention attendees can earn approximately 12 continuing education credits toward their licensure renewal requirement. Our business meetings are scheduled to give everyone a chance to participate in the Association's policy decisions.

The Maryland Pharmacist and MPhA Newsletter, published quarterly and monthly, respectively. In the recent past, these publications have dealt with issues which include collaborative practice, medication errors, confidentiality laws, pharmacists' workloads and the shortage of pharmacists.

A way to network with pharmacists in different locations and different practice settings, both hands-on and through other State Pharmacy Associations. Members have the unique opportunity to meet and develop professional relationships with practitioners in all types of health care settings. By planning and acting together, pharmacists can use a combination of knowledge and experience to benefit not only the profession, but also patients.

Pharmacy Laws and Regulations Governing the Practice of Pharmacy in Maryland, a copyrighted publication which is updated annually and is available to members at a discounted price. The new edition will be available approximately March of 2001. The revised book will contain the pharmacy laws to ensure compliance, provide information pertaining to prescribers as they impact on dispensing by pharmacists, on laws related to confidentiality of medical records, and on insurance as it effects pharmacy. The book will also contain commentary by a learned jurist and pharmacist, and will be provided in layman's language explaining Title 12, relative sections of Title 27, and other statutes and regulations. All parts of the revisions passed during the end of the previous year's Legislative Session will be included in the current edition. The current edition will be available until the 2001 edition is released.

If you have any questions about these member benefits please feel free to call the MPhA office at 410-727-0746 or e-mail us at mpha@erols.com.

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The Maryland Pharmacists Association has contracted with many corporations to offer member only discounts and benefits to assist you with your professional, business, and personal expenses. They include:

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The Disney Club! Some of the privileges Club members will receive include: member-only previews of new offerings, including the newest Theme Park, Disney's California Adventure; discounts at the Disney Store, The Disney Catalog and The Disney Store.com; special offers on Disney videos and DVDs; and preferred access to select Disney theatrical performances. Walt Disney World® Resort in Florida and the Disneyland® Resort in California will be key components of the program. Enrollment forms are available by calling the MPhA office.

PEAC - Pharmacists' Education and Assistance Committee formerly Pharmacists Rehab. Committee - For private, confidential referrals, call 410-706-7513 or 410-727-0746.

Mayer & Steinberg, Inc. Insurance Program - Mayer & Steinberg is offering discounted insurance rates. Now you can protect your most valuable asset, your income, with a 10% discount. Or, take a minimum 10% discount off Long Term Care Insurance rates for yourself, your spouse, or your parents. To take advantage of this program, call Charles Klein at 410-484-7000.

A Coldwell Banker Real Estate Program—*A Nest Egg Strategy*—a real estate commission savings plan that can return thousands of dollars to you when you buy and sell properties in Maryland and in many other parts of the United States.

MPhA has negotiated an agreement that provides exclusive "*member only*" access to Coldwell Banker for substantial savings on real estate commissions. Now members can save 12% on real estate commissions on all types of properties—home, rental properties, stores, vacation property, etc. You even save thousands when you purchase property. To activate this program, call Coldwell Banker at 800-833-7356 and give this code: MPhA.

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Want to Place an Ad?

Have something to sell, rent, or trade? Need a pharmacist? Looking for a new position? MPhA members can place a classified ad in the *Maryland Pharmacist* and reach more than 1,000 pharmacists for free. All ad copy is subject to approval and space availability. Reservations are due the first of the month preceding issue month. To place an ad, send your typewritten copy to MPhA, 650 W. Lombard Street, Baltimore, MD 21201-1572 or FAX to 410-727-2253.

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Baltimore, MD 21201-1572
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2001 MEMBERSHIP DATA FORM

Knowing who you are and what you do is important! We use this confidential demographic information to plan continuing education programs and assess new member benefits and their value to you. Please take a moment to complete these sections.

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Preferred Honorific

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☐ R.Ph.
☐ Pharm.D.
☐ Other ____________________

Home Phone ____________________________

Employer ____

Work Phone ____________________________

Fax Number ____________________________

E-mail ________________________________

School of Pharmacy ____________________________ Year of Graduation ____________

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Please check:

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I	☐	Associate (*industry*)
S	☐	Pharmacist (*staff*)
O	☐	Pharmacist (*owner/manager*)
R	☐	Retired
U	☐	Student (*non-licensed*)
X	☐	Other

PRIMARY PRACTICE

Please check:

C	☐	Chain Pharmacy
I	☐	Independent Pharmacy
H	☐	Hospital
L	☐	Long Term Care
M	☐	Managed Care
A	☐	Academia
G	☐	Government
O	☐	Other

Legislative District __________

Important Tax Information

Dues for MPhA are not deductible as charitable contributions for Federal Tax purposes. However, they may be deductible as ordinary and necessary business or miscellaneous expenses. Because of tax law changes affecting association membership dues deductibility, you may not deduct any portion of your dues which goes towards lobbying local, state, or national government agencies. MPhA has determined that the deductibility of your MPhA dues is limited to no more than 85% of your total dues.

Influx of Women is Altering Workplace Dynamics

The increasing numbers of women in pharmacy are changing the makeup of the national pharmacist workforce and will likely exacerbate the current shortage of pharmacists. This is because women, on average, work fewer hours throughout their careers than men do, and are more likely to practice part-time.

These are among the findings of The National Pharmacist Workforce Survey: 2000, commissioned by the Pharmacy Manpower Project (PMP). PMP is comprised of 14 national pharmacy associations, including AACP, which serves as secretary. A copy of the survey report (including charts) is posted on the AACP Web site: www.aacp.org.

The survey was conducted by the Midwest Pharmacy Workforce Research Consortium. Authors of the report are: Craig A. Pedersen, Ph.D., Ohio State University, project director; William R. Doucette, Ph.D., University of Iowa; Caroline A. Gaither, Ph.D., University of Michigan; David A. Mott, Ph.D., University of Wisconsin-Madison; and Jon C. Schommer, Ph.D., University of Minnesota.

The survey was designed to collect information on demographics and practice characteristics of the U.S. pharmacist workforce from a nationally representative sample. The total number of usable responses was 2,092 out of 4,880, for a statistically significant response rate of 42.9 percent. Survey results will be further analyzed by the survey authors in the coming months.

Just 73.3 percent of all licensed pharmacists were working full-time (more than 30 hours per week) in pharmacy during 2000, according to the survey findings. "That's rather striking," says Pedersen, the survey's project director. "More than a quarter of licensed pharmacists are choosing not to work full-time." Another 14.9 percent of pharmacists were practicing part-time.

Women make up more than 44 percent of all actively practicing pharmacists, 41.3 percent of all pharmacists working full-time and 62.1 percent of pharmacists working part-time, according to the survey findings. More than 21 percent of women were employed in pharmacy part-time compared with 9.9 percent of men. With women comprising 60 to 70 percent of pharmacy school enrollments, their impact on the pharmacist workforce will only grow over the next few years.

The percentage of women working part-time increased to 25.0 percent in 2000 from 22.8 percent in 1995. The majority of males working part-time were over age 60 (61.8 percent), while 77.7 percent of females working part-time were between ages 23 and 45.

As older male pharmacists are replaced with younger females, and with more male pharmacists nearing retirement age, the results of this study suggest that an even greater number of women pharmacists will be needed to meet future workforce demands. Average age of women pharmacists working full-time is 37.4 years vs. 46.2 for men. More than 80 percent of female pharmacists are less than 46 years old, compared with just 42 percent of male pharmacists.

In a further analysis of the survey data, Pedersen compared pharmacist full-time equivalents (FTEs) for men and women. One FTE is equal to someone working 40 hours a week for 52 weeks. Even taking into account vacations, men worked an average of slightly more than 1 FTE, through the age of 55, and then falling only slightly to .99 for men ages 56 to 60.

The FTE for female pharmacists, on the other hand, starts out below 1 for the youngest age group (up to age 30), and then drops to .83 for females ages 31 to 35, rising only to .87 until age 60. Thus, across their careers, female pharmacists have an FTE of .85, meaning that they work an average of 34 hours per week versus 41 to 42 hours a week for men.

"Schools will have to do more than just maintain a one to one ratio," in order to replace retiring male pharmacists because females are choosing to work fewer hours, says Pedersen.

The proportion of pharmacists working in chain pharmacy dropped slightly to 23.3 percent in 2000, from 24.8 percent in 1995 while the proportion of pharmacists working in independents dropped significantly, to 16.5 percent in 2000 from 19.0 percent in 1995. The percentage of pharmacists practicing in hospitals also declined to 24.7 percent from 27.3 percent over the five-year period.

The percentage of pharmacists in supermarkets increased to 9.0 percent in 2000 from 6.9 percent in 1995 and the percentage of pharmacists practicing in mass merchandisers rose to 6.3 percent, up from 5.0 percent.

An analysis by the survey authors of where pharmacists worked in 2000 compared to the practice setting where they worked in 1995 reveals that as many as a third of pharmacists have chosen to move to a different practice setting in those five years. "This suggests that there are a lot of dissatisfied pharmacists who are willing to try something different," says Pedersen. He adds that further analysis of this data will be conducted to try to confirm whether this is the case.

Among the other highlights of the survey report:

- Some 12.3 percent of pharmacists already work full-time—14 percent of males and 10 percent of females—also have part-time jobs, where they work an average of 8.7 hours a week. Eighteen percent of pharmacists working part-time also hold second part-time jobs. Full-time pharmacists practicing in hospitals were most likely to have a second job (20.5 percent) as were part-time pharmacists practicing in independent pharmacies (25.0 percent).
- The largest proportion of full-time pharmacists work in staff positions, 55.7 percent, whereas 33.3 percent work in management positions. More than 88 percent of part-time pharmacists work in staff positions.
- Some 55.4 percent of actively practicing pharmacists practice in a community pharmacy setting. The largest proportion of full-time pharmacists work in a chain setting, 25 percent; followed by hospitals, 24.8 percent; other practice settings, such as clinics, HMOs, long term care, home health care, mental health facilities and prisons, 13.6 percent; and independent pharmacies, 13.3 percent.
- Nearly 12 percent of licensed pharmacists were not actively engaged in pharmacy practice in 2000. Pharmacists who were retired accounted for 6.2 percent of licensed pharmacists.
- The largest proportion of males working full-time worked in chains, 25.4 percent, followed by hospitals, 22.3 percent, and independent pharmacies, 16.8 percent. The largest proportion of females working full-time worked in hospitals, 28.4 percent, followed by chains, 24.5 percent, and other practice settings, 13.4 percent.
- The largest proportion of part-time pharmacists works in independent settings, 30.9 percent, followed by hospitals, 20.3 percent, and chains, 16.1 percent.
- Some 28.9 percent of females were in management positions compared with 36.4 percent of males and 2.5 percent were owners compared with 11.1 percent of the men.
- Full-time pharmacists worked an average of 44.2 hours per week, 48.7 weeks per year. Full-time pharmacists in independent pharmacies worked the most hours per week, 47.7, and pharmacists in supermarkets worked the fewest hours, 41.9. Part-time pharmacists worked an average of 19.0 hours per week and 44.2 weeks per year.

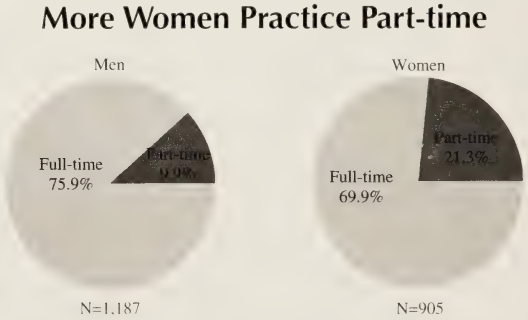

Figure 1. Work status of licensed pharmacists by gender

Written by: Janice Zoeller, Editor
Reprinted with permission from the American Association of Colleges of Pharmacy. *AACP News*, Volume 31, Number 9 September 2000

Argus Urges Schools: Teach Responsibility for Dispensing

In embracing a pharmaceutical care role for pharmacy graduates, have pharmacy schools and colleges neglected to teach students how to manage the drug dispensing process?

The most recent report of the AACP Argus Commission concludes that schools and colleges need to do more to teach pharmacy students how to assume responsibility for the drug dispensing process, even while actual drug dispensing is being done increasingly by technicians and robots.

The report of the Argus Commission 1999-2000 states: "Our students must be able to provide the skills to practice within systems in which they are responsible for maintaining the accuracy and efficiency of drug distribution within those systems. Assuring efficient and safe access to pharmaceuticals by patients in all settings is just as important to the medication use process as are related clinical services."

The Argus Commission is made up of the five most recent past-presidents of AACP. Members of the Argus Commission 1999-2000 were: David A. Knapp, Ph.D., University of Maryland, chair; Jordan L. Cohen, Ph.D., University of Iowa; Hugh F. Kabat, Ph.D., University of New Mexico; Mary Anne Koda-Kimble, Pharm.D., University of California, San Francisco; and Charles O. Rutledge, Ph.D., of Purdue University. The Commission members were charged by then AACP President Robert E. Smith, Pharm.D., to study pharmacy workplace issues and their impact on pharmacy education, and to make recommendations.

"The Commission is calling for curriculum committees of the schools to take another look," that in addition to preparing students to provide pharmaceutical care, "we need to make absolutely sure that pharmacists who are graduating not only understand the importance of dispensing but have a good understanding of systems of dispensing," Knapp told *AACP News*.

The Argus report notes that pharmacy graduates have been criticized by some employers as "unprepared for the productivity pressures of practice, unable to manage technical personnel, overly clinical in orientation and biased against community practice."

...schools and colleges need to do more to teach pharmacy students how to assume responsibility for the drug dispensing process

The Commission acknowledges the validity of this criticism, observing: "Argus believes that pharmaceutical education has failed to educate and train students to appreciate and understand what is involved with managing dispensing systems and what it means to know about and to take responsibility for what goes on within these systems."

The report continues: "[a]s pharmacists move from close proximity of actually preparing prescription orders to designing, implementing, managing, and taking responsibility for safe drug distribution and dispensing systems, we in pharmaceutical education must assure that students possess the necessary competencies to perform these tasks."

The Commission report includes two policy recommendations that were approved by AACP at its annual meeting in July 2000.

Policy statement 1: "AACP affirms that the responsibility for the accuracy, efficiency, and safety of dispensing medication is a component of pharmaceutical care."

Policy statement 2: "AACP affirms that pharmacists must be responsible for the design and operation of safe medication dispensing and distribution systems."

The report also discusses the rising demand for pharmacists that is outstripping supply, and the need to more accurately predict demographic and other variables to anticipate future needs.

By 2003, the number of outpatient prescriptions will increase to 4 billion from 2.7 billion in 1998, the report notes. Utilization is being driven up by a variety of factors: a growing number of elderly citizens, aggressive marketing of Rx pharmaceuticals directly to patients, and expanding third-party coverage. There's also the strong likelihood that a prescription drug benefit will be added to Medicare, which will further spur drug utilization and increase the need for oversight.

The number of pharmacy schools and colleges has increased by 8 since 1995 to a total of 81 in the fall of 1999. The number of pharmacy graduates increased 30 percent from 1985 and exceeded 8,300 in 1999. This is not enough, though, to meet current and projected needs. Complicating efforts of schools to expand enrollments: the pharmacy applicant pool has been declining since 1995, and there is a shortage of pharmacy faculty.

The Argus Commission report calls on AACP to "undertake and improve student recruitment," and also to "develop initiatives to expand the quantity and quality of core faculty in pharmacy practice."

Assistance for the expansion of pharmaceutical education is needed from the federal government, according to the report. The Commission maintains that "the profession of pharmacy is too small to undertake all the responsibilities that society is asking of it."

It goes on to state: "The projected increase in future medication use and its associated adverse consequences as outlined in the Institute of Medicine report is a national public health problem requiring national recognition and a national response."

Written by: Janice Zoeller, Editor
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Black Cohosh for Women

Historically, black cohosh (*Cimicifuga racemosa*) was used by Native Americans for relief of pain, colds and coughs, constipation, insomnia, rheumatism, and a variety of "female complaints." Today it is widely used for dysmenorrhea and the symptoms of menopause.

A member of the *Ranunculaceae* (buttercup) family, black cohosh is also known as black snakeroot, snake root, bugbane, bugwort, fairy candle, rattleweed, and rattleroot. However, black cohosh should not be confused with "blue cohosh" (*Caulophyllum thalictroides*), which has also been used for menstrual pain but constricts blood vessels and may be cardiotoxic.

The exact mechanisms of action of black cohosh are uncertain. It reduces luteinizing hormone (LH) levels and is considered mildly estrogenic; black cohosh rhizome extracts have also been shown to bind to estrogen receptors in rat uteri.

The Complete German Commission E Monographs lists black cohosh as an approved herb for the treatment of premenstrual discomfort, dysmenorrhea, and menopausal symptoms. In Germany, this herb is one of the most widely used remedies for menstrual pain and/or menopausal symptoms.

An uncontrolled study of more than 600 women found extracts of black cohosh to improve a variety of menopausal symptoms, including hot flashes, excess sweating, irritability, headache, palpitations, vertigo, and ringing of the ears.

Additionally, double-blind studies in Europe have shown substantial benefits compared with conjugated estrogens, diazepam, and/or placebo. One study of 60 women compared 80 mg/day black cohosh with 0.625 mg/day conjugated estrogens or 2 mg/day diazepam for 12 weeks. The herb group experienced greater relief of menopausal symptoms, including depression and anxiety, with considerably fewer side effects. Another study compared 90 mg/day black cohosh extract with 0.625 mg/day conjugated estrogens or placebo in 80 women—again, symptom relief, including vaginal atrophy, was greater in the herb-treated group. The beneficial effects are usually noted after a few weeks of administration.

The *Commission E* suggests that black cohosh be used at daily doses of 40 mg (extracts with 40-60% alcohol) for no more than six months. Occasional gastric discomfort is the most common side effect reported.

For more information, contact The American Botanical Council (512-926-4900) or the Herb Research Foundation (800-748-2617).

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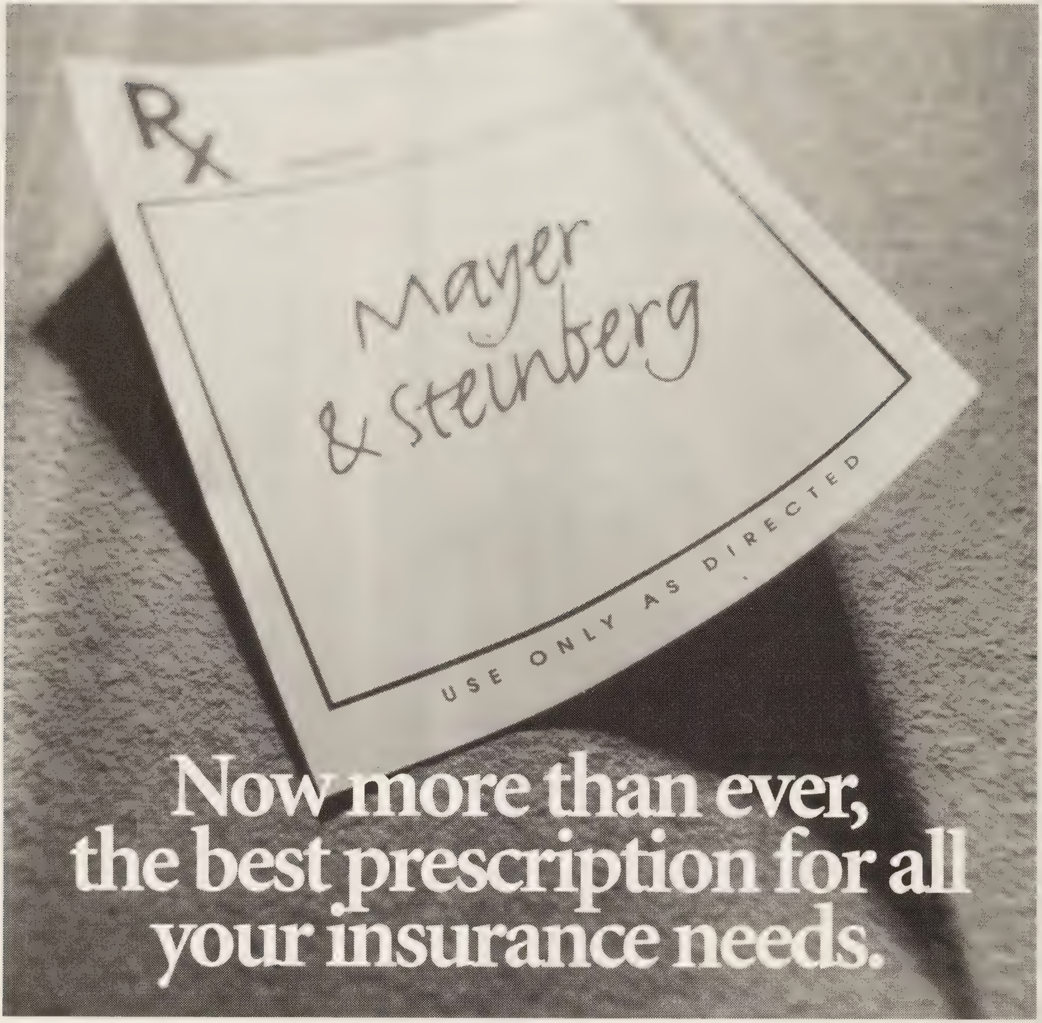

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Will You Be Ready?

Retirement Planning is a Life-Long Process

by
Frank C. Speace
Robert B. Wolfe, C.F.P

Other than facing up to the thought of never filling another prescription or consulting with another patient, perhaps the greatest challenge for a pharmacist approaching retirement is making reliable assumptions about the future. Since the quality of your life in retirement will be determined by the quality of your long-term financial plan, it is imperative to make prudent and conservative investment choices now. Just like when you are checking the accuracy of the prescription you filled, even a slight error could have dramatic effects.

In order to determine what assumptions you should use in your own retirement plan, ask yourself the following questions:

How much will you be able to save once you have an "Empty Nest"?

Many pharmacists plan to set aside more money for their own retirement after their children have been raised and educated. Often, however, these well-meaning plans never come to fruition because of increased spending patterns as life progresses. Other pharmacists have their best intentions thwarted when they encounter unforeseen responsibilities, such as paying for a child's advanced degree, caring for sick or elderly patients, or supporting grown children. A recent survey conducted by Money Magazine determined that approximately one in three retirees provide financial assistance either to children or grandchildren.

A better strategy would be not waiting until your children "leave the nest" to start your retirement plan contributions. Keep your lifestyle in check and begin a disciplined savings plan early. Even if this means setting aside what you would otherwise consider a paltry amount, start saving now! Turn your savings and investment program into a good habit. Also, make regular and systematic increases to the amount you invest, especially receiving a pay raise, and take advantage of tax-protected savings plans which do not carry heavy penalties once you access the money in retirement.

How much income growth are you expecting?

Pharmacists sometimes overestimate their future income potential or believe, at the very least, their income will steadily increase throughout their careers. Unfortunately, the profession is sometimes unpredictable. Many underlying circumstances could cause a pharmacist's income to remain fixed, or even worse, decrease. Furthermore, a career change, a costly divorce, or disability could immediately and/or permanently reduce your earnings growth potential. Base your retirement plan on your current earnings, but if you feel compelled to factor in a growth rate for your income, make it a conservative estimate.

What long-term return can you expect from your investments?

Attractive returns over the last decade have substantially distorted many investors' expectations. Investors cannot prudently assume the next 10 years will deliver the same combination of excellent stock market performance and low inflation. In addition, pharmacists who delay their preparation for retirement will force themselves into the unenviable position of needing to invest more aggressively than would otherwise have been necessary.

Again, establish an overall investment plan early in your career, diversify your portfolio, and maintain realistic performance expectations. Buying relatively safe, blue-chip stocks as you initiate an investment plan, then holding on to them over the years, will provide much more security and likely as much gain in the long run as taking wild risks on "get-rich-quick" stocks later in life. You'll end up with fewer gray hairs, too.

Are you investing to get to or through retirement?

Investing for growth should not end the day you fill your last prescription. If you stop paying attention to your nest egg, inflation will dramatically and simultaneously reduce your purchasing power and quality of life. Admittedly, you may want to invest more conservatively upon retirement, but it is not a necessity. In fact, as long as you remain financially active, the most important determinants of the level of risk you need to take in your investment portfolio are your specific financial goals and objectives.

Determine your goals and objectives, then construct an investment portfolio that will give you the highest likelihood of reaching your goals with the least amount of risk along the way. Even in retirement, continue to watch your investments for opportunities to maximize their potential.

Where will your retirement income come from?

Some pharmacists, overestimate the contribution their pension plans and Social Security will make towards their overall income requirements in retirement. For the most part, both of these income sources are fixed benefits, which will not buy the same level of goods and services on an inflation-adjusted basis year after year.

It is important to take steps now to minimize your reliance on these fixed benefits. Instead, plan to grow your investable assets to cover inflation-adjusted income needs in retirement. Endeavor to create an investment portfolio that pays you in retirement while continuing to grow in value.

Will your expenses decrease in retirement?

One of the most ridiculous "rules of thumb" I encounter is the contention several personal finance magazines make, that the average person will need only about 70 to 80 percent of his or her pre-retirement income to maintain their desired standard of living in retirement. Why? Because each person's situation is dramatically different. The thinking is that people will live on less after retiring because they no longer have workplace expenses like business clothing, daily travel, and costly lunches to contend with. In reality, retirees have more time to pursue the activities they may have previously only dreamed about and as a result, many retired pharmacists may in fact spend more in retirement than while working.

Although they may have been diligent savers while working, once they retire, many of them start taking advantage of things like extensive travel opportunities, or they indulge themselves in expensive hobbies like sailing, antique cars, or even something as simple as golfing on a daily basis. Still others, who fell in love with an exotic (expensive) location like Hawaii or the Caribbean, decide to purchase a retirement property there.

When planning for retirement, scrutinize your financial goals very carefully. Spend time with your spouse, or anyone else who may figure in your plans, to determine what the "perfect" retirement looks like and how much you feel it really will cost. (I would be very surprised if it is even close to being as low as 70 percent of your pre-retirement income). Make realistic projections of what you can afford, and don't forget to consider inflation as a potentially limiting factor.

How long do you expect to live?

Of course this is impossible to answer conclusively, but it should give you cause to contemplate your life expectancy, if only for a moment. With the average life expectancy in this country dramatically increasing over the last century and all of the medical advances and breakthroughs that continue to occur, it is imperative to plan for accruing the financial resources to spend at least one-third of your life in retirement.

Develop your retirement plan based on the assumption you will live 30 percent longer than the average life expectancy . dictate. For example, if the life expectancy for your particular sex, racial background, and personal lifestyle is 75 years, create your retirement plan as if you are going to live to 98 (75 x 1.30). This may appear overly optimistic, but you must remember that life expectancy is nothing more than the average age that someone born into a certain demographic group is expected to live. Be prepared for the best possible scenario.

Once you answer all of these questions and determine which assumptions are prudent to use in your retirement plan calculations, you will be ready for a successful, rewarding, and enjoyable retirement.

Frank C. Speace is an Account Manager at Compu-Val Investments, Inc., based in Wilmington, DE. He specializes in the design and implementation of customized investment planning strategies for pharmacists and other high net worth individuals.

Robert B. Wolfe is a certified Financial Planner and Vice President of Compu-Val Investments, Inc.

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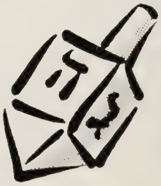

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Continuing Education for Pharmacists

Volume XVII, No. 9

Patient Counseling: New Drugs of 1998-99: ACE Inhibitors and AIIR Blockers

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

and

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

Goals. The goals of this lesson are to discuss new angiotensin converting enzyme inhibitors and angiotensin II receptor blockers. The entire classes of these drugs and their combinations are also presented.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. exhibit knowledge of the pharmacologic classification and therapeutic considerations for the drugs presented;
2. select from a list, the indication, mechanism of action, benefits and limitations of these drugs;
3. identify adverse reactions, major toxicities, and drug interactions associated with these products; and,
4. demonstrate an ability to counsel patients on these drugs.

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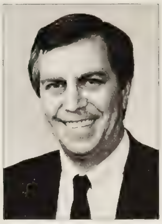

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Hypertension

Untreated, prolonged, elevated blood pressure is linked to an increase in the development of cardiovascular disorders including atherosclerosis, angina pectoris, heart failure, myocardial infarction, stroke, peripheral vascular disease and kidney failure. Overall, the condition leads to an earlier death than with patients whose disease is under control or who do not have hypertension.

Hypertension is defined as systolic blood pressure ≥140 mm Hg or diastolic pressure ≥90 mm Hg. Blood pressure classification is shown in Table 1. When a patient's systolic and diastolic pressure is included in two different categories, the category with the higher reading should be used.

More than 50 million Americans (approximately 25 percent) have hypertension. Currently, there are ten major pharmacologic groups of antihypertensive drugs (Table 2). The drugs discussed in this lesson are still in active development with several new products being marketed in 1998 and 1999.

The most recently marketed angiotensin converting enzyme inhibitor is perindopril (Aceon). This drug was approved some time ago under sponsorship of another company, but Solvay has acquired its marketing rights. The angiotensin II receptor blocker is candesartan (Atacand). Moexipril (Univasc), trandolapril (Mavik), irbesartan (Avapro) and telmisartan (Micardis) preceded them to the market in recent years. Another AIIR blocker, eprosartan (Teveten), was ap-

Table 1
Classification of Blood Pressure (mm Hg)[a]

Category	Systolic		Diastolic
Optimal[b]	<120	and	<80
Normal	<130	and	<85
High-normal	130-139	or	85-89
Hypertension[c]			
Stage 1	140-159	or	90-99
Stage 2	160-179	or	100-109
Stage 3	≥180	or	≥110

a = adults age 18 and older; not acutely ill and not taking antihypertensive medication
b = optimal blood pressure is below 120/80
c = based on average of two or more readings on two or more office visits after the initial diagnosis.

Table 2
Ten Major Drug Groups Used to Treat Hypertension

- Angiotensin converting enzyme inhibitors
- Angiotensin II receptor blockers
- Arteriole vasodilators
- Beta-adrenergic blockers
- Calcium channel blockers
- Centrally-acting alpha-2 adrenergic agonists
- Loop diuretics
- Peripheral catecholamine depleters
- Postsynaptic alpha-1 adrenergic blockers
- Thiazide and similar diuretics

proved but not marketed at the time of preparation of this lesson.

It is believed that a significant number (estimated at over 50 percent) of persons with hypertension remains undiagnosed and over 40 percent of those who have been diagnosed, do not comply with therapy. A major reason for this is clear: high blood pressure has few perceptible symptoms. Patients cannot feel their blood vessels constrict nor the development of morbid, deadly effects of long-term elevated blood pressure. On the other hand, many of the drugs used to treat the condition may cause annoying adverse reactions that patients *do* experience.

It is difficult to make patients feel better when they don't feel badly in the first place. Therefore, when patients experience annoying adverse reactions from their medication, they often reduce the dose, skip doses or stop taking the drug.

Angiotensin converting enzyme inhibitors (ACE inhibitors) and angiotensin II receptor blockers (AIIR blockers) have become highly prescribed drugs for hypertension. New products continue to be approved and released to the market. There are several reasons for this. Both groups affect the renin-angiotensin-aldosterone (RAA) system which is a major component in the mechanisms by which hemostasis is controlled and ideal blood volume is maintained throughout the body. Malfunctions in the RAA system are believed to contribute greatly to the pathophysiology of hypertension.

These agents provide a smooth rather than profound, immediate drop in blood pressure which is an advantage for many patients. They have a once-daily dosage (therefore, easier compliance), and relative to the other antihypertensive drugs, a low incidence of side effects. Another important factor that benefits their manufacturers and promotes further development is that since they are relatively new pharmacologic groups, they have protected patent lives. This increases the opportunity for significant return on research/development investments when marketed successfully.

In the marketplace, generics are available in the beta-adrenergic blocker, calcium channel blocker (except for some controlled release dosage forms) and diuretic categories. They have decimated sales of branded products. With the ACE inhibitors, only captopril is off patent. The AIIR blockers have several years remaining on patent protection.

As far as hemostasis of blood pressure by the RAA system is concerned, renin is the primary enzyme responsible for the metabolism of angiotensinogen. This inactive precursor to angiotensin I is the precursor to the vasoconstrictor angiotensin II. Aldosterone is the primary mineralocorticoid produced in the adrenal cortex which is responsible for the exchange of potassium and hydrogen ions to reabsorb sodium from the distal tubules in the kidneys.

The RAA system is involved in numerous other hemostatic processes including affecting the vasomotor center in the brain, which is responsible for maintaining vasomotor tone in the arteries. To review, when a bolus of blood is pumped out of the heart, there is not sufficient pressure to force it throughout the cardiovascular system or against gravity to return it to the heart from the lower extremities.

To accomplish this, the arteries must be slightly constricted most of the time. Comprised of elastic tissue, arteries are able to constrict and dilate. When the bolus of blood leaves the heart, it exerts physical force on the arterial walls causing them to dilate. As blood moves through a particular length of blood vessels, vasomotor tone induces the vessels to return to their previous

Table 3
Commercially Available Angiotensin Converting Enzyme (ACE) Inhibitors

Generic	Trade	Availability	Dosage Regimen
benazepril	Lotensin	5, 10, 20, 40mg tablets	20-40mg 1-2 times/day
captopril	Capoten generics	12.5, 25, 50, 100mg tablets	25-50mg 2-3 times/day
enalapril	Vasotec	2.5, 5, 10, 20mg tablets	10-40mg 1-2 times/day
fosinopril	Monopril	10, 20, 40mg tablets	20-40mg 1-2 times/day
lisinopril	Prinivil Zestril	2.5, 5, 10, 20, 40mg tablets	20-40mg once daily
moexipril	Univasc	7.5, 15mg tablets	7.5-15mg 1-2 times/day
perindopril	Aceon	*release pending**	*release pending**
quinapril	Accupril	5, 10, 20, 40mg tablets	20-80mg 1-2 times/day
ramipril	Altace	1.25, 2.5, 5, 10mg capsules	2.5-20mg 1-2 times/day
trandolapril	Mavik	1, 2, 4mg tablets	1-4mg once daily

**at the time of writing this lesson*

constricted state. This forces the blood along the cardiovascular system moving it back toward the heart.

When the RAA system functions properly, there is a balance in water and sodium reabsorption/excretion from the kidneys to increase blood volume, and vasoconstriction/vasodilation to maintain blood flow properly throughout the body. Various areas of the body are supplied with adequate blood flow most of the time. When more blood is needed in any area, it will be supplied.

Mechanism of Action

The transformation of angiotensin I into angiotensin II is controlled by angiotensin converting enzyme (ACE). The angiotensin II produced by this enzymatic action is the most potent vasoconstrictor formed in the body. As stated, it also stimulates the adrenal gland to secrete aldosterone to raise blood pressure by enhancing sodium retention from the distal renal tubules.

Another function of ACE is the conversion of bradykinin, a potent vasodilator, into its inactive metabolites which aids in elevating the blood pressure. Overall, inhibiting the activity of angiotensin converting enzyme lowers elevated blood pressure.

The ACE inhibitors (Table 3) have been used in the treatment of mild to moderate hypertension long enough and extensively enough to be considered for early therapy along with the thiazide diuretics, beta-blockers and calcium channel blockers by many physicians.

Unlike the ACE inhibitors which interfere with the synthesis of angiotensin II, AIIR blockers (Table 4) block the action of angiotensin II at its physiologic receptor sites. There are two known subtypes of angiotensin receptors: type 1 (AT1) and type 2 (AT2). The AIIR blockers are most specific for the AT1 receptors which are located in vascular smooth muscle and aldosterone-producing areas in the adrenal gland. They do not block the angiotensin receptors in other tissues significantly.

Table 4
Commercially Available Angiotensin II Receptor (AIIR) Blockers

Generic	Trade	Availability	Dosage Regimen
candesartan	Atacand	4, 8, 16, 32mg tablets	2-32mg once daily
eprosartan	Teveten	300, 400mg tablets	*release pending**
irbesartan	Avapro	75, 150, 300mg tablets	150-300mg once daily
losartan	Cozaar	25, 50, 100mg tablets	25-100mg 1-2 times/day
telmisartan	Micardis	40, 80mg tablets	20-80mg once daily
valsartan	Diovan	80, 160mg capsules	80-320mg once daily

**at the time of writing this lesson*

Differences Between ACE Inhibitors and AIIR Blockers

It is difficult to differentiate between all of the antihypertensive effects of the ACE inhibitors and AIIR blockers. The primary difference is in the adverse reactions they cause. With ACE inhibitors, the most morbid (but very rare) adverse reaction is angioedema. This is a condition of severe subdermic edema (thought to be caused by excessive levels of bradykinin) which can cause intense pain, discoloration and disfigurement of skin, especially in the face.

A more prevalent, less morbid, but annoying adverse reaction to the ACE inhibitors is a dry, persistent cough which many patients will not tolerate. This, too, involves bradykinin.

Since ACE catalyzes the breakdown of bradykinin, inhibition of ACE can lead to its excessive accumulation. This, in turn, leads to excessive formation of prostaglandins. Since most of this activity occurs in the lungs, the increased levels of bradykinin and prostaglandins irritate respiratory tissue and the body responds by coughing.

Because the AIIR blockers reduce the activity of angiotensin II at its receptors in the vascular smooth muscle and adrenal medulla, and do not inhibit ACE, they do not affect bradykinin levels. Therefore, they do not cause the annoying cough and are more acceptable than the ACE inhibitors to many patients.

Boxed Warning About Pregnancy

Drugs that act directly on the RAA system can cause fetal and neonatal morbidity and death when administered during the second or third trimester of gestation. All of these drugs must list the following boxed warning in their professional labeling (package insert):

> "WARNING: USE IN PREGNANCY: When used in pregnancy during the second and third trimesters, drugs that act directly on the renin-angiotensin system can cause injury and even death in the developing fetus. When pregnancy is detected (*drug name*) should be discontinued as soon as possible. See WARNINGS: Fetal/Neonatal Morbidity and Mortality."

Indications

The ACE inhibitors and AIIR blockers are indicated for treating mild to moderate hypertension. They may be used alone or in combination with other antihypertensive drugs. Several fixed combinations are available (Table 5).

Some, but not all ACE inhibitors are also approved for treating

Table 5
Commercially Available Combination Drugs Affecting the RAA System

ACE Inhibitor + Thiazide Combinations

Capozide	captopril + hydrochlorothiazide
Lotensin HCT	benazepril + hydrochlorothiazide
Prinzide	lisinopril + hydrochlorothiazide
Vaseretic	enalapril + hydrochlorothiazide
Zestoretic	lisinopril + hydrochlorothiazide

ACE Inhibitor + Calcium Channel Blocker

Lexxel	enalapril + felodipine
Lotrel	benazepril + amlodipine
Tarka	trandolapril + verapamil
Teczem	enalapril + diltiazem

AIIR Blocker + Thiazide Diuretic Combinations

Avalide	irbesartan + hydrochlorothiazide
Diovan HCT	valsartan + hydrochlorothiazide
Hyzaar	losartan + hydrochlorothiazide

heart failure, myocardial infarction and diabetic nephropathy. The newer drugs have not been available long enough to gain these indications. Whether the AIIR blockers receive additional indications will be determined in the future.

Patient Counseling

Since hypertension does not produce overt symptoms in most people and prolonged, elevated blood pressure can shorten life expectancy, patients should be encouraged to take their medications as instructed. Most drugs in these groups can be taken with meals or on an empty stomach with the exception of captopril (Capoten) and moexipril (Univasc). The manufacturers of these two products state that they should be taken one hour before a meal.

Patients should tell their physician about any prescription, nonprescription and herbal medicines they are taking. While there are no serious, life-threatening drug interactions reported with ACE inhibitors or AIIR blockers, there is a potential for the development of hyperkalemia if patients taking these drugs ingest large quantities of potassium. Both classes of drugs can decrease potassium excretion since they inhibit the production of aldosterone. Prescription potassium supplements should be used only with great caution. OTC potassium-containing mineral supplements and salt substitutes should be used only under medical supervision.

Over-the-counter cold remedies containing decongestants (pseudoephedrine and phenylpropanolamine) and appetite suppressants (phenylpropanolamine) carry warnings on their labeling advising patients with hypertension against taking the products without first discussing them with their physician or pharmacist.

As pharmacists we should be aware that decongestants are indirect-acting sympathomimetics, which are vasoconstrictors. They can raise blood pressure, thus aggravating hypertension even further. We should also be aware that they are not contraindicated in patients with hypertension. Instead, they are to be used with caution, preferably not at all if patient safety is the utmost concern.

Patient safety is certainly the goal of professional practice, but the legal aspect of practice can not be ignored. The rhetorical question is: Does it make sense to allow patients with hypertension to purchase a decongestant-containing OTC product when its label warns the patient against its use? Obviously this is done every day, but if pharmacists are looking for ways to increase their worth in the public's eye (and with it a chance for a viable future), paying more attention to labeling and being more involved in product selection could be one way to do it. Grocers and web masters won't provide this service, but pharmacists should.

Some patients taking these drugs have experienced dizziness and lightheadedness (from orthostatic hypotension). Manufacturers advise patients to be careful driving or operating hazardous equipment until they know how they react to the drug. Excessive sweating, diarrhea and vomiting can worsen hypotension due to body fluid loss. Patients should tell their physician if these occur.

Other adverse reactions that should be reported to the physician include swelling of the face, throat, lips or tongue (angioedema); wheezing or troubled breathing (excessive formation of bradykinin); fainting (orthostatic hypotension) or rash or hives (allergy). There is a possibility of cross-sensitivity between these drugs, so patients should tell their physician of any previous history of allergic reaction to any ACE inhibitor or AIIR blocker.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: New Drugs of 1998-99: ACE Inhibitors and AIIR Blockers." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 4/15/02. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-99-009-H01.

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1. All of the following are characteristics of antihypertensives that affect the RAA system EXCEPT:
   a. once a day dosage regimen.
   b. lower incidence of side effects than most other antihypertensives.
   c. an immediate drop in blood pressure.

2. Which of the following is the primary function of renin?
   a. Metabolizing angiotensinogen
   b. Vasoconstriction of arterioles
   c. Exchanging potassium for sodium in the distal tubules
   d. Vasodilation of arterioles

3. Which of the following is the primary function of aldosterone?
   a. Metabolizing angiotensinogen
   b. Vasoconstriction of arterioles
   c. Exchanging potassium for sodium in the distal tubules
   d. Vasodilation of arterioles

4. Which of the following is a primary function of bradykinin?
   a. Metabolizing angiotensinogen
   b. Vasoconstriction of arterioles
   c. Exchanging potassium for sodium in the distal tubules
   d. Vasodilation of arterioles

5. Which of the following is a primary function of angiotensin II?
   a. Metabolizing angiotensinogen
   b. Vasoconstriction of arterioles
   c. Exchanging potassium for sodium in the distal tubules
   d. Vasodilation of arterioles

6. The angiotensin II receptor blockers are most specific for which of the following type of receptors?
   a. AT1 c. AT3
   b. AT2 d. AT4

7. All of the following are characteristics of angioedema EXCEPT:
   a. disfigurement of the face.
   b. dry persistant cough.
   c. discoloration of the skin.
   d. intense pain.

8. The box warning for ACE inhibitors and AIIR blockers alerts to the potential to cause:
   a. liver damage. c. fetal death.
   b. allergic reactions. d. nephrotoxicity.

9. Patients taking an AIIR blocker should NOT self-medicate with which of the following?
   a. Aspirin c. Antihistamine
   b. Dextromethorphan d. Decongestant

10. Patients taking an ACE inhibitor should NOT self-medicate with which of the following?
   a. Salt substitute c. Sleep aid
   b. Aspirin d. Antiemetic

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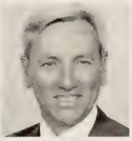
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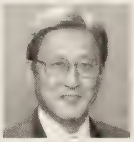
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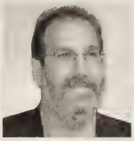
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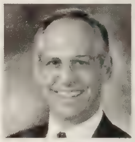
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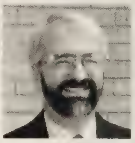
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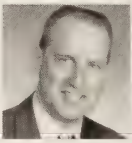
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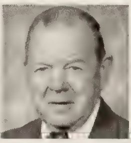
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MARYLAND Pharmacist

VOLUME 77, NO. 1

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"MPhA – 118 Years and Counting"

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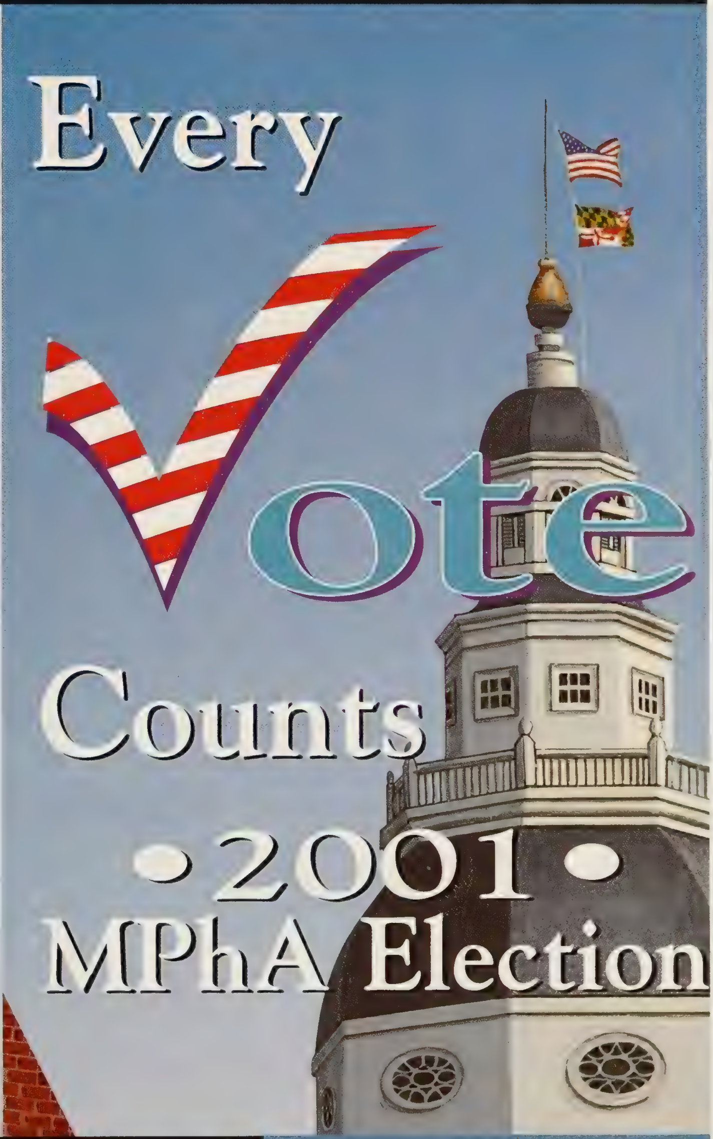
Statements of the Candidates

Recognizing Pharmacy Excellence
2001 MPhA Awards

The Winter Blues
It's SAD



MARYLAND PHARMACISTS ASSOCIATION

JAN / FEB / MAR 2001

Maryland Pharmacists Association

650 W. Lombard Street
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Maryland Pharmacist

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Murhl Flowers, P.D.
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President's Commentary

"MPhA—118 YEARS AND COUNTING"

The Maryland Pharmaceutical Association was formed 118 years ago by a handful of independent pharmacy owners. Obviously, they could not have foreseen the transformation that the pharmacy profession and the association would make over the years.

Looking back on the history of MPhA, there have been four "landmark" changes in the last 50 years that changed the complexion of the association.

- ➢ In 1953, a permanent home was achieved when the Kelly Memorial Building was built. This was the culmination of a seven-year fundraising effort to raise $100,000. These efforts also resulted in obtaining from the university a 100-year lease on the land upon which the building stands for $1 a year. We still have 50 years to go on this lease.

- ➢ As pharmacy's evolution rapidly began to increase in the 1960s and 1970s, specialized practice segments took form, i.e., nuclear pharmacy, hospital pharmacy, consultant pharmacy, long-term care pharmacy, home infusion, etc. This resulted in the "splintering" of the association due to the formation of associations for some of those groups.

- ➢ The change of the name from Maryland Pharmaceutical Association to Maryland Pharmacists Association in the early 1980s reflected the evolution of the profession into specialized areas.

- ➢ The late 1980s and 1990s produced a change in the membership base from that of independent owners to employee pharmacists.

Each one of these changes ultimately changed the complexion of the association. We, as an organization, are still struggling to find an answer to the change in the membership base.

As we embark on the ambitious fundraising effort to totally renovate the Kelly Building, the result of this campaign will produce another "landmark" change in MPhA. When the renovation is complete, we will be able to more efficiently serve our members. We will also be able to competitively bid to provide administrative services to other organizations. The downstairs will become a showplace for pharmacy in Maryland and will feature two period pharmacies: a 19th century pharmacy and a 1950s vintage pharmacy—complete with a soda fountain. It will become a favorite location for meetings, receptions, etc.

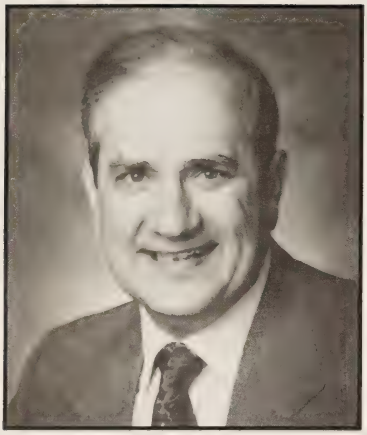
So, this is an exciting time to be involved in the association and to be a part of such a change that positively affects MPhA. Our immediate challenges of fundraising and membership still need to be addressed successfully. By doing so, we can leave a legacy for our following pharmacy colleagues to be proud of. I sincerely solicit the support and assistance of every Maryland pharmacist on these issues. Your association needs you now. Get involved—make a difference.

I am reminded of a saying by Will Rogers: "Just being on the right track doesn't make any difference, if you don't go anywhere." Join with us to make sure that MPhA goes wherever you might want to go.

Director's Column

Legislation 101

Howard R. Schiff, P.D.
Executive Director



To the uninitiated pharmacist the idea of a uniform prescription card is a "no-brainer." The first time one of us has to call a PBM or an HMO for a group number or a proper person number, he/she is convinced that the proper information should be on the card. To a legislator, who only knows a pharmacy from the consumer side of the counter, the value of a uniform card is a learning experience. When Delegate Don Elliott, pharmacist and MPhA member introduced the original bill last year, the members of the Senate and House of Delegates committees had to be educated. Just as you or I might be when dealing with a profession about which we knew nothing, legislators were hesitant and wanted information. To educate them, yeoman work was done by the lobbyists from the Maryland branch of the Association of Chain Drug Stores (MACDS) aided by the National Association of Chain Drug Stores (NACDS). Opposition from insurance entities didn't help our cause. To be fair, their lobbyists had to be educated also. However, until some pressure could be applied, the insurance entities would be reluctant to give an inch. Although the bill was killed, there was a directive from the Senate for the matter to be studied by the Maryland Insurance Administration (MIA) prior to the 2001 session.

The chief objections from the insurance companies were the cost of new cards and the need for a second card because all the medical information could not be contained on one card. Both concerns were bogus. Agreement to mandate the new cards only when old cards had to be replaced was a ready compromise. The National Council for Prescription Drug Programs (NCPDP) had several formats, some of which accommodated all the necessary medical information.

Still, favorable resolution of the issue is in doubt. At a meeting in November, a representative from the MIA met with lobbyists from the insurance industry, NACDS, MACDS, MPhA, and the Board of Pharmacy. Education of the non-pharmacists again was necessary. Now the major objection seemed to be that the bill wouldn't cover the self-insured or Medicare recipients so why bother. The courts have decided that Federal law covers these entities even though insurance matters are supposed to be within the province of the state. That, theoretically, is the reason an effort for a law on the national level was not possible.

As of this writing, two reports have brought the issue to what is hopefully a successful conclusion for pharmacy. One was the federal report on the shortage of pharmacists. It stated that 20 percent of a pharmacist's time was spent on insurance matters and was a contributing cause to the shortage. The other was an agreement between pharmacy groups and insurers in Virginia.

At a briefing before committees in the Senate and House a fair and generally favorable report from MIA was delivered. In the corridor outside the Senate Finance meeting room, the lobbyist from an insurer distributed the agreed upon bill from Virginia. Accord appears to have been achieved although whether or not the bill will apply to Medicaid insurance cards still has to be worked out.

Though I still consider myself a novice, I feel a sense of accomplishment. What seems simple when behind the counter takes a long time and an enormous effort. However, these things have a way of unraveling so don't hold your breath. If we're lucky, Maryland will join the seven other states that have passed uniform prescription card legislation.

EVANDER FRANK KELLY

By Richard Baylis, CGP, FASCP

Evander Frank Kelly was born on July 2, 1879 in Carthage, North Carolina. After working in several pharmacies he enrolled in the Maryland College of Pharmacy, now a part of the University of Maryland, and graduated with the Doctor of Pharmacy degree in 1902. At that time he was awarded a gold medal as the first college prize and also the practical pharmacy prize. In 1903 he was retained as a laboratory assistant by his Alma Mater, and in 1906 he was appointed Associate Professor of Pharmacy and a Professor in 1917. About this time he was also associated with a pharmaceutical manufacturer in Baltimore, where he advanced steadily to the position of superintendent until 1911. In 1918 he was appointed Dean of the School of Pharmacy and became Advisory Dean in 1926. In 1926 he was elected Secretary of the American Pharmaceutical Association, a position he occupied until his death on October 27, 1944. In 1933 in recognition of his many contributions to pharmacy, Dr. Kelly was awarded the Remington Medal; the profession's highest award, the same year he was given an honorary Doctor of Science degree by Temple University.

Among the offices and memberships Dr. Kelly held were: Secretary of the Maryland Pharmaceutical Association (1907-42); Professor of Chemistry in the University of Maryland School of Dentistry (1916-22); Lecturer in Pharmacy at the Johns Hopkins Medical School (1917-42); Maryland Board of Health (1920-44); U.S.P. Revision Committee (1920-30); U.S.P. Board of Trustees (member 1930-44, chairman 1940-44); United States Pharmacopeia Convention (1910-44); Vice-President, American Association of Colleges of Pharmacy (1921); American Council on Pharmaceutical Education (1932-44); American Association for the Advancement of Science; Maryland Academy of Sciences; Secretary-Treasurer, Drug Trade Conference; Secretary-Treasurer, National Drug Code Authority; Acting Editor, Journal of the American Pharmaceutical Association; Editor, Practical Edition, Journal of the American Pharmaceutical Association; Reviser, Caspari's *A Treatise on Pharmacy*; membership on other scientific committees and pharmaceutical organizations.

When he became Dean in 1918, following World War I, there were only 52 students in the Department of Pharmacy and 24 graduated in 1919. In 1918 he was active in the group, which succeeded in having the Student Army Training Corps made available to those students in the School of Pharmacy who were high school graduates. To meet this requirement, and with only scant funds, it was necessary to add two subjects Physiology and Hygiene, and Bacteriology.

Dr. Kelly actively worked for the amalgamation of the Baltimore professional schools of the University of Maryland with the Maryland State College to form the State University, accomplished through an act of the State Legislature in 1920.

The Schools of Dentistry and Pharmacy needed more space for their activities, and again Dr. Kelly actively participated in the planned purchase of the property at 27 South Greene Street, consisting of the old church and parsonage of the Emmanuel Evangelical Church. The chemistry and pharmacy laboratories moved to this building.

A group of prominent alumni of the dental and pharmacy groups formed the Greene Realty Company, purchased the building at 6 and 8 South Greene Street and leased the building to the University at a nominal rent. The Schools of Dentistry and Pharmacy made use of the facilities afforded by this building, beginning on October 2, 1926. Dr. Kelly, as usual, gave of his time, effort and money to assist in providing these additional quarters for the Schools of Pharmacy and Dentistry.

The alumni and friends of the Schools of Pharmacy and Dentistry were successful in having the Maryland Legislature of 1927 appropriate sufficient money to erect and equip the building at the northwest corner of Lombard and Greene Streets. Dr. Kelly was vitally interested and assisted in securing this appropriation.

Dr. Kelly painstakingly and diligently assisted in planning and selecting the additional subjects to raise the curriculum of the School of Pharmacy from the two year to the four year course. A three year course was established in 1919, consisting of the regular two year course and an additional year of advanced work leading to the diploma of pharmaceutical chemist. In 1922-23, provision was made for students to use the course in pharmacy towards meeting the requirements for admission to the School of Medicine of the University of Maryland. The four year course was first outlined in the catalogue of 1925-26. The curriculum led to the diploma of Graduate in Pharmacy awarded upon completion of the first three years of the course and the Batchelor of Science degree in Pharmacy awarded upon the completion of the work prescribed for the entire course of four years. He was Advisory Dean when the graduate courses for the Master of Science degree were outlined in the 1928-29 catalogue, and also when provisions were made for the courses leading to the Doctor of Philosophy degree.

Dr. Kelly's interest in pharmaceutical education extended beyond our local School of Pharmacy. In 1932 he and the late Dr. A. G. DuMez assisted in the organization of the American Council on Pharmaceutical Education, which develops educational standards and provides for the inspection and accreditation of the nation's schools of pharmacy. Dr. Kelly served as the first and continuing president of the Council until his death in 1944.

Evander Frank Kelly became Secretary of the American Pharmaceutical Association in 1925 and served until his death, a span of nineteen years, which covered a period of unequalled prosperity as well as years of economic depression in the history of our nation. It also covered the greater part of World War II. Dr. Kelly was the first full-time Secretary of the Association; the first to bear the title of General Manager and the first Administrative Officer of the Association to occupy quarters rented specifically as offices of the Association. He was also the first to occupy and manage the American Institute of Pharmacy, the beautiful headquarters building of the American Pharmaceutical Association in Washington, D.C.

Another illustration of his pioneering spirit is found in the fact that he was the first pharmacist to become a member of a state Department of Health. Dr. Kelly served on the Maryland State Department of Health for about 25 years.

Pill Tiles

This is one of several fund raising efforts by the Maryland Pharmacists Association Foundation to refurbish the Kelly Memorial Building.

Only a few pharmacists still use pill tiles in their daily practice. In fact, many who compound ointments use sheets of paper rather than the traditional square tile.

Now you can purchase your own personalized pill tile. These tiles can be personalized with your name or message. It is a fitting way to commemorate yourself, a loved one, or an event. The pill tiles will be displayed in the refurbished Kelly Memorial Building.

For more information, call the MPhA office at 410-727-0746 or 800-833-7587.

Thank you for your support!

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidate for First Vice President

Paul R. Holly, P.D.
9012 Scotts Haven Drive
Baltimore, MD 21234

West Virginia University School of Pharmacy
Graduation Year: 1970
Practice: Specialty Pharmacy/ Organ Transplant
Employer: Stadtlanders/CVS-ProCare

It would be an honor and a privilege to represent *our* profession as First Vice President of MPhA. I have been actively committed to the pharmacy profession for over 30 years and have practiced in a variety of settings. These include retail, hospital, government, store owner, long term care, and specialty pharmacy. By serving as a member of NCPA, APhA, ASCP, and MSHP, I am aware of specific issues impacting these practice areas. These experiences provide me with a recognition and broader understanding of the challenges facing pharmacy practice today. Evidence of my commitment to the future of our profession is documented by having served as a preceptor for students at the University of Maryland School of Pharmacy.

My experience in working with the Board of Trustees since 1995, when I was first elected, has been extensive. I have held positions on various committees and currently serve as Coordinator for Fund Raising. In the Coordinator position, my responsibilities include planning fund raising activities for the MPhA Foundation.

The constant changes in health care that we have been experiencing require a strong and active pharmacy association. *Our* association needs to be responsive to the needs of its members as well as focused on identifying future potential challenges. It is critical to the viability of *our* profession.

I invite your input regarding *our* association and the challenges facing the various pharmacy practice settings. My experience and commitment will enable me to contribute to the strength of *our* profession and *our* association. I appreciate your continued support.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidate for Second Vice President

Richard D. Baylis, CGP, FASCP
7600 Water Oak Point Road
Pasadena, MD 21122

Albany College of Pharmacy
Graduation Year: 1961
Practice: Long Term Care Pharmacy
Employer: HMIS-Omnicare at Levindale

I am honored to be nominated for the office of Vice President of the Maryland Pharmacists Association. As you probably are well aware, I have been very active in Association affairs for many years.

I currently serve as a Trustee for MPhA and am President of the Maryland Chapter of the American Society of Consultant Pharmacists. As a MPhA Trustee, I have served on the Legislative Committee and Building and Museum Committee, of which I have been chair for the last two years. I have served on the PAC Committee of ASCP for the last three years and am currently a member of their Legislative Affairs Committee.

My first experience in Association affairs goes back almost 45 years, when I was a student working for Peoples Drug Stores in the suburbs of Washington, D.C. Since then, I have felt a need to actively participate in professional association activities.

We all have a common interest in providing the best health care to the public. This can only be assured by mutually bonding together in professional societies to share our expertise and prevent encroachment upon our practices by outside forces. Only through our professional associations can we have a positive impact on the forces swirling around us.

I feel that my many years of association and professional experience will be of great value to MPhA. My hope is to become a leader for all pharmacists. I sincerely appreciate your support.

Cynthia Boyle, Pharm.D.
12 Concord Place
Havre de Grace, Maryland 21078

University of Maryland School of Pharmacy
Graduation Year: 1996 [1971 Okla. Univ.-B.S.]
Practice: Faculty, Experiential Learning
Employer: UMB School of Pharmacy

Now that the media has caught up with our concerns about the pharmacist shortage and safe medication practices, I view this office as an opportunity to work with you on these and other emergent issues. I am thoughtfully aware of the four-year commitment required by our new bylaws, and I enthusiastically offer my energy and experience. In twenty years of membership, I have participated in various MPhA committees, as a local association president, convention delegate, and now, Speaker of the House of Delegates. I value each person I have met and worked with because *in MPhA, pharmacists are colleagues instead of competitors.*

In pharmacy, I have experience primarily in community practice and also as a hospital and consultant pharmacist. I have thrived on direct patient contact, on the challenge of managing a profitable business, and in participation as an integral member of the healthcare team. In returning for my Pharm.D., I sought to rediscover the reasons I had become a pharmacist in the first place and to grow professionally toward the future. Now, as Assistant Director of Experiential Learning, I am privileged to have a much broader perspective on pharmacists' professional challenges and contributions to patient care than ever before. Because of these experiences, two relationships which I believe MPhA activities should support and protect are pharmacist-patient and pharmacist-healthcare team.

My goals within MPhA and the school are parallel: *to recruit capable future pharmacists; to uphold high standards of professionalism; and to improve pharmacy practice in Maryland.* None of these goals can be reached without organized efforts. With your support, I will answer the call to activism.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidate for Treasurer

Lance Berkowitz, P.D.
8910 Griffin Way
Baltimore, MD 21208

Medical College of Virginia
Graduation Year: 1965
Practice: Community Pharmacy
Employer: Professional Pharmacy, Essex, MD

As a pharmacist, journalist and community activist, I have appeared on local and national radio and television commenting on health and education.

I served during the Governor William Donald Schaefer administration as a member of the Maryland Board for Community Colleges where I helped govern a program with a $100 million budget and 78,000 students. I am the chairman of the Harford Belair Mental Health Association Foundation, and the past president of the Baltimore Metropolitan Pharmacists Association.

I am also one of the founders of the Harvest for Health, a nationwide program to collect and distribute thousands of pounds of health care products for the needy. In October 1995, I was selected as the 1995 recipient of the U.S. Pharmacist/Searle Service to the Community Award, the national award given to an individual pharmacist who has distinguished him or herself in the service of their community and their fellow citizens.

I will strive if re-elected treasurer, to continue to provide the association with a prudent approach to fiscal responsibility, and I will exhaust all possibilities in helping to raise additional funds to improve the Kelly Building.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #1

Marcus Carson, P.D.
3827 Janbrook Road
Randallstown, MD 21133

Howard University School of Pharmacy
Graduation Year: 1970
Practice: Retail Community Pharmacy
Employer: Rite Aid Corporation

As a community pharmacist, who has worked in hospital practice and has provided services to long-term care facilities, I have been privileged to serve as a trustee of the Maryland Pharmacist Association and am seeking re-election to a second term.

I was an independent pharmacy owner and manager for 23 years, and a founding member of EPIC Pharmacies and a member of that board. Leaving independent practice after selling my pharmacies, I am now a Rite Aid community pharmacist. I continue my dedication to pharmacy practice as a trustee of the Maryland Pharmacists Association; my interest in health care as a member of the Board of Directors of Northwest Hospital Center, and my interest in community as a member of a Baltimore County Police Department advisory council.

Our profession has undergone many drastic changes in the last few years. Not all of these changes benefited pharmacy practice and the patients we serve. We have great challenges to overcome. As the husband of a pharmacist and the father of a pharmacist-to-be, I have and will continue to work to protect and serve our profession. I ask for your support to allow me to continue. Thank you for your consideration.

Joe Marrocco, P.D.
3909 Eland Road
Phoenix, MD 21131

Duquesne University School of Pharmacy
Graduation Year: 1973
Practice: Retail Community Pharmacy
Employer: Giant Foods, Inc.

In this new millennium, as society is looking more at pharmacy to being a vital component and key player in our health care system, pharmacists are limited at the present time, in our ability to maximize our roles.

The growth and increase in sheer volume of prescriptions indicate that pharmacists today are working harder, seeing more patients, filling more prescriptions than ever, while at the same time, pharmacists' knowledge, care for patient's well being, and their accessibility is hardly being tapped.

With the current shortage of pharmacists, society is going to have a very difficult time receiving the full benefit from pharmacists in the current system.

Studies by NACDS indicate that nearly 70% of a pharmacist's time is spent on activities that could be done by properly trained technicians, i.e. telephone answering, counting, packaging, and labeling prescriptions, and resolving third party insurance issues.

As a Trustee of MPhA, I pledge to you my desire to ensure pharmacy benefits and new drug payment systems that appropriately align financial incentives and rewards with society's needs to pharmacists to enable patients to achieve optimum outcomes of proper medication utilization with suitable drug and compliance information and monitoring.

For nearly ten years, I have enjoyed the honor and privilege to serve our profession and MPhA, as a Trustee and officer. I am committed to promulgating the goals and expectations of MPhA and our profession, and ask for your support. Thank you for your consideration.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #2

DeAnna (Dixie) Leikach, R.Ph.
508 Bond Avenue
Reisterstown, MD 21136

University of Maryland School of Pharmacy
Graduation Year: 1992
Practice: Retail Community Pharmacy
Employer: NeighborCare Pharmacy

I have been involved with MPhA since before I even got into pharmacy school! I attended the Mid-Year Meeting in 1989 in order to accept a scholarship I had received my first year of school. My mentor, Sharon Allman, had already encouraged my participation in pharmacy organizations while I was working with her in Salisbury. Once a student, I volunteered often in the office. During my rotation with former Executive Director David Miller, I helped plan focus groups throughout the state for the association. I have served on various committees since graduating and was honored by the association in 1998 as the Maryland Distinguished Young Pharmacist of the Year.

I have worked in retail pharmacy since 1989 and am very aware of the issues that are a part of my everyday life. My husband, Neil, is an independent pharmacy owner, therefore I am familiar with the issues facing independent pharmacy today. My involvement with MPhA and also as a national officer of Lambda Kappa Sigma International Pharmacy Fraternity gives me the opportunity to also be aware of the concerns of all pharmacists. I feel that I am able to represent pharmacy as a whole and not just from "my world."

It is an honor to be considered for a trustee position, and I appreciate the chance to serve this association.

Michael Souranis, P.D.
6504 O'Donnell Street
Baltimore, MD 21224

University of Maryland School of Pharmacy
Graduation Year: 1990
Practice: Independent Community Pharmacy
Employer: Bayview Pharmacy

As a community pharmacist and active member of our MPhA, I have had the privilege of serving our association in various capacities including the Legislative Committee, and was honored as the Maryland Distinguished Young Pharmacist of the Year (1997). Through my involvement in our organization, I have had the opportunity to work with and talk to many pharmacists in all practice settings throughout our state pertaining to the day-to-day issues, changes, and concerns that confront our profession. I recognize and continue to share your interests and ideas as to what can we do to promote the betterment of our profession, including compensation for cognitive services to conducive working environments which benefit us and the patients we ultimately serve.

As a candidate for a MPhA Trustee, my twenty years of pharmacy experience allows me to work with everyone to make pharmacy in Maryland more strong and appealing and position ourselves to face the issues that lie ahead.

With a diligent commitment to achieving the goals and expectations of MPhA and our profession, I respectfully ask for your support in affording me all possible consideration to serve you as a trustee.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidate for Trustee Seat #3

Matthew Shimoda, Pharm.D., FASCP
1079 Huntfield Road
Westminster, MD 21157

University of Maryland School of Pharmacy
Graduation Year: 1984
Practice: Clinical Care Manager, Community Pharmacy
Employer: NeighborCare Pharmacy

Pharmacy has been my life since I can remember. My father was with the FDA for forty years before coming to work with me in my practice, and taught me more about the world of pharmacy than anyone else in my life. After graduating from UMB with a Pharm.D. in 1984, I was expected to go forth in the "ways of clinical pharmacy," but I was convinced by my mentor Robert Rosenberg that I was best suited to practice in the community setting. This was a decision that I will never regret. I worked under his guidance for one year until he decided that it was time to retire and suddenly I became the co-owner of a community pharmacy chain one year after graduating.

I have served pharmacy in many capacities over the years, including a Trustee seat with MPhA from 1998 to 2000.

I have always believed that the "practice" of pharmacy is diversified and most importantly what we as individuals make of it. When I first left school, many thought that using my educational training to be a pharmacist in a community setting would be wasted. I firmly believe that we in pharmacy, whatever setting we chose, provide a valuable service to the patients we serve and we as pharmacists should be proud of our accomplishments.

I will do my best to serve you, as I have in the past, to improve our standing as professionals in this ever changing world of healthcare. It would be an honor for me to once again serve you in our profession.

Richard S. Nakles, R.Ph.
152 Little Quarry Road
Gaithersburg, MD 20878

Duquesne University School of Pharmacy
Graduation Year: 1970
Practice: Retail Community Pharmacy
Employer: CVS

As a veteran of 31 years, all of which in retail pharmacy, I have seen "the good, the bad, and the ugly" of the profession. The rewards, both professional and personal, can be so gratifying...they are what keeps me motivated when the job can be overwhelming.

I feel it is not too harsh to say that we are in a crisis today. The prescription volume and the insurance industry have caused the stores, already hit by pharmacist and technician shortages, to reach beyond their capacity, to the point of patient risk. I will work as an advocate for the pharmacist in bringing this to the forefront of everyone's attention.

When we get *so* busy and overworked, we tend to forget our importance in the healthcare system and the degree to which we are respected by the public. We must better use that importance and respect to affect change for the benefit of our patients.

To affect change, we must work together with physicians, insurance companies, the Board of Pharmacy, and the chain drug stores. At times, it seems we are adversaries, when, in reality, each cannot exist without the others. I will urge cooperation and a meeting of the minds to ease tensions that exist and remove the obstacles to efficient and safe healthcare.

I feel my realistic outlook of pharmacy can help the Association achieve these goals. My matter-of-fact attitude may ruffle a few feathers, but I'm not afraid to speak out with the truth when the well-being of the pharmacist and the health and safety of the patient are at stake. I welcome your support.

Statements of the Candidates

2001 Maryland Pharmacists Association Elections

Candidates for Trustee Seat #4

Magaly Rodriguez deBittner, Pharm.D., BCPS
100 Penn Street, Room 240 I
Baltimore, MD 21201

Puerto Rico School of Pharmacy
University of Maryland School of Pharmacy
Graduation Year: B.S.-1979; Pharm.D.-1983
Practice: University/Community Pharmacy
Employer: UMB School of Pharmacy

As a faculty member, I have the pleasure of interacting with many students and practitioners. Although I have practiced in hospital pharmacy, my current practice involves community pharmacy. I have been able to develop model patient care programs where *reimbursement for services is a reality.* I have developed pharmacist training programs and a community pharmacy residency. As a longstanding MPhA member, I have served on its various committees.

Patient care must be the focus of pharmacy. It must be an integral part of our pharmacy functions, which include dispensing. We need to develop effective practice models that demonstrate our impact on patient care outcomes. As pharmacists, we need to work together to gain recognition as providers.

Changes in health care are causing dramatic changes in our profession. We must define our future. If we do not act now, someone else (other health care professionals, government agencies, or insurance companies) will define it for us. Pharmacists' working conditions, payment for cognitive services, collaborative practice and technology are just a few of the issues that our Association must deal with. MPhA needs to be an innovative force that moves each one of us to act. As the Nike logo says: "Just do it!" We must stop talking about what could be or should be. We must act now!

I bring to MPhA enthusiasm, experience and commitment to excellence in pharmacy practice. It would be my honor to serve all pharmacists in the State of Maryland. Thank you for your support!

Abigail Lagman Strawberry, R.Ph.
5115 Vest Lane
Waldorf, MD 20601

University of Maryland School of Pharmacy
Graduation Year: 1993
Practice: Hospital and Retail Community Pharmacy
Employer: University of Maryland Medical Center
and Wal-Mart

If elected to this position, I will do my best to represent the Maryland Pharmacists Association, the profession of pharmacy and you—the pharmacists of the state of Maryland.

I have been practicing as a hospital pharmacists for seven years and recently began practicing in the retail community setting. These experiences have shown me the diversity of our profession.

We are in a dynamic profession which is constantly changing. We must take a proactive role in our profession in order for us to provide the pharmaceutical care our patients and customers need and deserve.

As a Trustee, I will be in the forefront on promoting our profession. I will be your voice in the association by actively participating in meetings and committees. I have the work-ethic, dedication, and leadership to help our association make a positive impact on pharmacy and healthcare.

MPhA has given me a great deal in my short pharmacy career as a student and pharmacist. It would be an honor to be elected to the MPhA Board of Trustees. I look forward to working with MPhA in promoting our profession of pharmacy.

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Hand Washing!

The population of Maryland as well as many other states are still on intimate terms with many of the more common enteric diseases (hepatitis A, shigellosis, samonellosis, giadiasis, etc.). Therefore, we are providing this important Hand Washing Fact Sheet. Remember, "Hand washing is the single most effective means of preventing communicable diseases!"

Why is hand washing important?

Hand washing, when done correctly, is the single most effective way to prevent the spread of communicable diseases. Good hand washing technique is easy to learn and can significantly reduce the spread of infectious diseases in both children and adults.

What types of diseases can good hand washing prevent?

Diseases spread through fecaloral transmission. Infections which may be transmitted throught this route include salmonella, shigella, hepatitis A, giardia, enterovirus, amebiasis, campylobacter, etc. Because these diseases are spread through the ingestion of even minute particles of fecal material, hand washing following defecation cannot be over-emphasized.

Diseases spread through indirect transmission. Infections which may be transmitted through this route include influenza, strep, respiratory syncytial virus (RSV) and the common cold. Because these diseases may be spread indirectly by hands freshly soiled by respiratory discharges of infected people, illness may be avoided by washing hands after coughing or sneezing.

Diseases may also be spread when hands are contaminated with urine, saliva or other moist body substances. Infections which may be transmitted by one or more of these body substances include cytomegal-ovirus, schistosomiasis, typhoid, staphylococcal organisms, Epstein-Barr virus, etc. These germs may be transmitted from person to person or indirectly by contamination of food or of inanimate objects such as toys.

What is good hand washing technique?

There is more to hand washing than you think! By rubbing your hands vigorously with soapy water, you pull the dirt plus the oily soils free from your skin. The soap lather suspends both the dirt and germs trapped inside and are then quickly washed away.

Follow these four simple steps to keeping hands clean:

- *Wet your hands* with warm running water.
- *Add soap, then rub* your hands together, making a soapy lather. Do this away from the running water for at least 10 seconds, being careful not to wash the lather away. Wash the front and back of your hands, as well as between your fingers and under your nails.
- *Rinse your hands well* under warm running water. Let the water run back into the sink, not down to your elbows. Turn off the sink with a paper towel and dispose in a proper receptacle.
- *Dry hands thoroughly* with a clean towel.

What type of soap should be used?

Any type of soap may be used. However, bar soap should be kept in a self draining holder that is cleaned thoroughly before new bars are put out and liquid soap containers (which must be used in day care centers) should be used until empty and cleaned before refilling.

To prevent chapping, use a mild soap with warm water; pat rather than rub hands dry; and apply lotion liberally and frequently.

What are some things I should avoid during hand washing?

- DON'T use a single damp cloth to wash a group of children's hands.
- DON'T use a standing basin of water to rinse hands.
- DON'T use a common hand towel. Always use disposable towels.
- DON'T use sponges or non-disposable cleaning cloths unless you launder them on a regular basis, adding chlorine bleach to the wash water. Remember that germs thrive on moist surfaces!

What are some ways to help children with good hand washing technique?

It is important to encourage and help children to wash hands before eating, after playing outdoors or playing with pets, after using the bathroom, and after blowing their noses. Even though hands may appear to be clean, they may carry germs or microrganisms that are capable of causing disease.

Don't assume that children know how to wash their hands properly. Supervision, especially in a day care setting, is an essential element in forming good hand washing habits in children.

Finally, children learn by example! Let them observe good hand washing technique from the adults who care for them.

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The Winter Blues—It's SAD

By Yelee Y. Kim, Pharm.D. Candidate

It's the middle of winter, and you're feeling a little down. You've gained some extra weight over the holidays. You feel extremely fatigued, and all you want to do is lie in bed and sleep. Anxiety, irritability, and impaired concentration are disrupting your life. Is it the stress of the holidays that is dragging you down? Or could you be suffering from seasonal affective disorder?

Seasonal Affective Disorder (SAD)

Seasonal affective disorder (SAD) is a recurrent depressive disorder where episodes of depression occur at a particular time of the year. SAD is thought to affect about four to six percent of the general population, but the true prevalence of this disorder is unknown due to misdiagnosis and lack of patient reporting.[1] First defined by Rosenthal and colleagues in 1984[2], SAD is now a diagnostic term included in the *Diagnostic and Statistical Manual of Mental Disorders IV* (DSM-IV) of the American Psychiatric Association.

SAD is divided into two subtypes: summer SAD and winter SAD. Summer SAD generally begins in late spring or early summer and lasts through the early fall. In contrast, winter SAD patients usually develop symptoms in the fall or winter, and remission occurs in the spring or summer. Winter SAD appears to affect females more than males, and the average age of onset is 20-30 years. Both types of SAD are characterized by decreased libido, reduced concentration, stress and anxiety, withdrawal and isolation, and low mood.[3] This article will focus on the more common winter SAD, its etiology, clinical assessment, and treatment.

Etiology of Winter SAD

The exact etiology of winter SAD is unclear. However, researchers have strong evidence that decreased light exposure plays a significant role in the development of SAD. There appears to be evidence that the prevalence of SAD increases with an increase in northern latitude. This supports the theory that SAD may be linked to the hours of daylight that individuals are exposed to at different latitudes, since northern latitudes have a decreased amount of sunlight exposure.[4] Some researchers believe melatonin, a hormone that influences the secretion and regulation of various other hormones, plays a role in winter SAD. There appears to be increased secretion and resultant higher levels of melatonin in the absence of bright light, a factor that may contribute to changes in mood and behavior. These increased levels may also cause disturbances in circadian rhythms, the body's natural clock. Some studies indicate that depletion of the neurotransmitter serotonin and its dietary amino acid precursor tryptophan could also be causes of SAD. Serotonin has been implicated in the development of depressive disorders in general, but its potential role in winter SAD is strengthened by the fact that it is a precursor of melatonin.[5]

Clinical Assessment of SAD

Assessment of patients with SAD should include a full medical history of the patient, including the timing and intensity of previous episodes of depression. Other potential causes of seasonal depression, such as increased workload or anniversary of bereavement, must be considered. The diagnosis of SAD can be made based on symptoms, using the *International Classification of Mental and Behavioural Disorders* (ICD-10) criteria and the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) criteria as guidelines. Patients with winter SAD frequently display social withdrawal, decreased activity, sadness, and anxiety. Symptoms of winter SAD closely resemble those of atypical depression; increased sleep, increased appetite, carbohydrate craving, and weight gain are often seen. In contrast, summer SAD is characterized by more typical symptoms such as insomnia, decreased appetite, weight loss. Patients with SAD, like those with non-seasonal depression, may experience decreased libido, irritability, impaired concentration, and suicidal thoughts.

ICD-10 Research Diagnostic Criteria for SAD:

1. Three or more episodes of affective disorder for three or more consecutive years
2. Onsets and remissions within a particular 90-day period of the year
3. Seasonal episodes that substantially outnumber non-seasonal episodes

Treatment of Winter SAD

Light Therapy

As light deprivation appears to play a major role in SAD, first-line therapy for winter SAD is bright-light treatment. Patients are exposed to at least 2,500 lux of visible light from a light-box device. There is an intensity of about 100 lux in a house, 300-500 lux in the workplace, 2,000 lux or less on a rainy winter day, and 10,000 lux or more in direct sunshine.[6] There is variability in individual response, and the intensity of light utilized may be up to 10,000 lux. Ordinary white fluorescent light is acceptable, and ultraviolet light is not necessary. Patients sit within three feet of the light-box, and they are advised not to look directly at the light. Initial treatment is at least two hours daily, but the length of individual sessions may be adjusted based on light intensity. Shorter sessions may be given with more intense light-boxes. Patients are reassessed after two to three weeks, and thereafter, a maintenance dose of 30 to 60 minutes daily may be prescribed. Patients typically show improvement within a few weeks. Although side effects are rarely seen with light therapy, some patients may experience sore eyes and mild headache. Sleep disturbances may occur if treatments are given late in the evening.[7]

Pharmacological Therapy

Although light therapy is the first-line treatment for winter SAD, antidepressants are often used in combination with light-box sessions. Tricyclics antidepressants (TCAs), selective serotonin inhibitors (SSRIs), and monoamine oxidase inhibitors (MAOIs) have been used. There is more data on the use of SSRIs in SAD. Although agents such as fluoxetine[8] and sertraline[9] have been effective in some patients, drug therapy in general has not been shown to be largely effective in SAD. Additionally, the use of pharmacological agents, namely SSRIs, may exacerbate the atypical symptoms of SAD; patients may experience even more weight loss and decreased appetite. Individual patient response should determine the type of therapy used.

DSM-IV criteria for seasonal pattern specifier

A. There has been a regular temporal relationship between the onset of major depressive episodes in bipolar I or bipolar II disorder or major depressive disorder, recurrent, and a particular time of year (e.g., regular appearance of the major depressive episode in autumn or winter).

B. Full remissions (or a change from depression to mania or hypomania) also occur at a characteristic time of the year (e.g., depression disappears in the spring).

C. In the last two years, two major depressive episodes have occurred that demonstrate the temporal season relationship defined in Criteria A and B, and no non-seasonal major depressive episode has occurred during the same period.

D. Seasonal major depressive episodes (as described above) substantially outnumber the nonseasonal major depressive episodes that may have occurred over the individual's lifetime.

Conclusion

The diagnosis of SAD should be considered in patients who have seasonal episodes of depression. Although the etiology of SAD has not been elucidated, light therapy and antidepressants appear to have a role in treatment of the disorder. Seasonal SAD is a topic of ongoing research.

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2001 Maryland Leadership Elections
Official Ballot

Please select the candidate you believe will best fulfill the duties of the office by checking the box appearing beside their name.

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☐ Paul Holly, P.D.

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☐ Abigail Lagman Strawberry, R.Ph.

When completed, seal and return your self-mail ballot to the Maryland Pharmacists Association, ***received by Friday, April 27, 2001***. For questions, please call MPhA at 800-833-7587

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2001 Maryland Leadership Elections
Maryland Pharmacists Association
650 W. Lombard Street
Baltimore, MD 21201-1572

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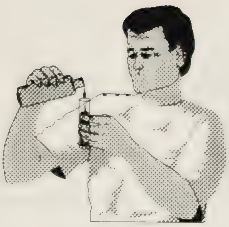

Pharm/alert® Notes

Counseling Notes for Pharmacists

When Your Patients Get Hives...

Hives (urticaria) are remarkably common: about 20% of the population will experience them at least once. Most outbreaks of hives result from an allergic reaction that causes a release of histamine into the skin. The allergy can be systemic, e.g., a food or drug sensitivity, or local, as in the case of direct contact with a sensitizing substance. Hives may appear on any body part, but they seem to appear most often on the arms, legs, and trunk.

Common causes of hives are drugs and chemicals; certain foods (e.g., eggs, nuts, shellfish, berries, tomatoes, milk), insect bites; contact with animals (particularly cats) and some fabrics (e.g., wool); extreme temperature changes; viral infections; and some systemic diseases (e.g., leukemia, lymphoma).

Regardless of the cause, the skin exhibits an inflammatory-type reaction, with itching, swelling and redness. Typically, hives are high pruritic, with raised red lesions or papules, or wheals; they can range in size from a few millimeters to several centimeters and can be spotty or appear in clusters. Most cases are acute and resolve in about 24 hours. However, some people experience chronic urticaria—hives that remain or recur for longer than six weeks. Others experience another less common type of hives, called "exercise-induced urticaria." In such cases the hives result from a combination of factors—for instance, when the person eats a particular food and then exercises right afterwards.

It is important to identify and eliminate the offending agent, which is often known to the patient. Hives will eventually clear without treatment; however, the itching and burning may be alleviated with cold or tepid compresses (never hot). Sometimes an antipruritic cream or gel is useful, as is aloe vera gel (assuming the person is not allergic to it). Antihistamines, preferably the non-sedating type, may be useful. When hives are chronic, an elimination diet and an environmental and lifestyle assessment may be necessary.

While hives do not cause injury or damage to internal organs, the itching and burning associated with scratching can be excruciating. More important, hives may be part of an acute allergic reaction leading to life-threatening anaphylaxis. For this reason it is important to tell your patients to call a doctor immediately if hives are accompanied by swollen lips, shortness of breath, wheezing, or a tight/constricted feeling in the throat.

For more information, contact the American Academy of Dermatology at 888-462-3376.

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Recognizing Pharmacy Excellence
The 2001 MPhA Awards

Each year, the Maryland Pharmacists Association recognizes professional excellence through a series of awards. To nominate a pharmacist for one of the awards described below, complete the Official Award Nomination Form. The forms should be submitted to: Award Nominations, c/o Maryland Pharmacists Association, 650 West Lombard Street, Baltimore, Maryland 21201-1572.

All nominations will be reviewed by the Past Presidents Council who is responsible for selecting the award recipients. The decision of the Council is final. Award recipients will be notified in advance of the award's presentation at the 119th Annual MPhA Convention.

For consideration, all nominations must be received no later than ***Friday, April 13, 2001.***

- **Pharmacists Mutual Distinguished Young Pharmacist Award**
  Awarded to a pharmacist who graduated within the past ten years and has made a significant contribution to the profession through service to a local, state or national pharmacy organization. ***Who is Eligible:*** Any MPhA pharmacist member who graduated from pharmacy school in 1992 or after.

- **Maryland Pharmacists Association Honorary President**
  An honorary position on the Board of Trustees given to a person, not necessarily a pharmacist, who has worked for the MPhA or Maryland Pharmacy over a long period of time.
  Who is Eligible: Any long standing contributor to the profession or the Association.

- **Seidman Distinguished Achievement Award**
  Created to honor the major impact on the pharmacy profession by Henry Seidman, this award is presented for outstanding service by a Maryland pharmacist to the pharmacy profession during ***either*** the past year or over a period of years. ***Who is Eligible:*** Any MPhA pharmacist member who meets the criteria of the award.

- **Wyeth-Ayerst Bowl of Hygeia Award**
  The Bowl of Hygeia recognizes a pharmacist who has performed outstanding services to the community in any area, with a particular emphasis on non-pharmacy contributions.
  Who is Eligible: Any MPhA member pharmacist who has not already received the Bowl of Hygeia.

- **DuPont Innovative Practice Award**
  Established in 1993, this award aims to recognize forward-thinking pharmacists who have expanded their practices into new areas. This may include adding a new service, restructuring a pharmacy and its current services, or developing a completely new practice. ***Who is Eligible.*** Any MPhA pharmacist member who meets the criteria of the award.

Maryland Pharmacists Association
Award Nomination Form

To nominate a Maryland pharmacist for one of MPhA's annual "Recognizing Pharmacy Excellence" awards, this form must be completed and returned to the Maryland Pharmacists Association no later than *Friday, April 13, 2001*. All nominations will be held in strictest confidence by the MPhA Past Presidents Council, which is responsible for selecting the award recipients. The decision of the Council is final. Award recipients will be notified in advance of the presentation of the award.

Please consider the following nominee for:

☐ ***Pharmacist Mutual Distinguished Young Pharmacist Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Seidman Distinguished Achievement Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Dupont Innovative Practice Award***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***Wyeth-Ayerst Bowl of Hygeia***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

☐ ***MPhA Honorary President***

Nominee ______________________________
Home Address ______________________________
City/State/Zip ______________________________
Current Place of Employment/Practice
____
Telephone ______________________________
Work Phone ______________________________
Name of Nominator ______________________________
Nominator's Phone ______________________________

Attach a current resume or curriculum vitae for the nominee that shows their professional and personal achievements. This information is essential for the Past Presidents Council to make its decisions as to which candidates will be recipients of the "Recognizing Pharmacy Excellence" awards. In addition, the nominator should attach a brief letter explaining why the nominee is worthy of receiving this award.

Return the completed form to:

Awards Nominations
c/o Maryland Pharmacists Association
650 W. Lombard Street, Baltimore, MD 21201-1572

Fold

2001 Awards Nominations
Maryland Pharmacists Association
650 W. Lombard Street
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Fold

How to Get the Interview

And What to Say and Do when You Get There

In today's major metropolitan areas, and even in less populated areas of the country, employers are often swamped with candidates for each posted position. To be a licensed pharmacist with a Pharm.D. and a residency is not enough to get the interview. Human resource people are overworked and underpaid. They recruit for many departments at the same time, and often misplace or never get resumes. What follows are some helpful hints on how to get the interview (if you are not using a recruiter) and what to say once you get there.

When responding to a job posted in a publication, sending the resume and waiting for a telephone call is almost as good as never sending your resume in the first place. You need to send a resume, with a short cover letter, directed to the person in the ad, stating that you will be following up in a couple of days with a telephone call to make sure the resume was received.

You must keep copious notes on when, where, and to whom you sent your resume. When making the follow up call, you must remember with whom you spoke, and what the person said. It can take numerous telephone calls, just to find out they ever received your resume. Many times you will be told that they never received it, and could you please resend, or fax it over now! Do not be surprised, it happens all the time.

Once you are assured that the proper person is in receipt of your resume, you need to find out what the next step in the interview process is. In most cases, it will be a telephone interview with either the human resource person recruiting for the department or the director of the department, or if it is a direct spot for which you are applying, then it possibly will be a telephone interview with the CEO.

When you find out what the next step in the process is, you must request to be taken to the next level. Insist on being given a time when someone will be reaching you by phone, and ask from whom to expect a call. During this initial telephone conversation/interview you want to ask as many questions as possible regarding the position: How large is the department?, Why is the position open?, How long has it been open?, When do you want to fill the position?, Who does the position report to?, etc. The only questions you want to avoid are concerning money and benefits.

Your goal during the telephone interview is to get him or her to remember you and make him or her want to bring you in for an in person interview. At the close of the telephone interview when he/she asks you if you have any other questions, you want to respond by asking, "When would you like to bring me in for an interview?" Do not say another word until he or she responds. Hopefully at this juncture he/she will either make arrangements to bring you in, or make plans for the next person to interview you. *Never expect them to call you*! Your job, until you get the job, is to follow up, follow up, follow up.

After you have gotten through the process on the telephone and you are going for an in person interview, you need to remember that there is never a second chance for a first impression! You must go dressed as a professional, even if the job (i.e., staff pharmacist) does not require a suit. For the initial interview, you want to wear one. Remember to bring a copy of your resume (they may have lost your original one), and be sure to get there 15 minutes prior to the scheduled appointment. When asked to fill out an application, make sure to leave the question about current salary blank. You will make negotiating for the highest possible salary very difficult if you fill in that spot. Remember to shake everyone's hand, and look them straight in the eye.

No matter what your thoughts are on the position that is open, act as if you want the job. It is always nicer to turn down a position than to never be offered one. At the close of the interview, if they ask if you have any additional questions, you can ask them: "How do you see me fitting into your organization?" and "When would you like me to start?" At this point you have yet to discuss money or benefits. You do not want to tell them how much you are currently earning, or even what you are looking for in the way of salary. You want the prospective employer to make you an offer. I will say this again, you can always turn down the position! Once they make you an offer (maybe not that day – next week or whenever), you will always have the opportunity to turn it down. You can tell them that you would like to know what they are offering, and you would like to think about it. When speaking to them again, you can tell them that it was lower than what you expected, and hope that they will sweeten the pot.

Negotiating for yourself is often difficult and is best done by a third party. A good recruiter can negotiate far more for you than you could get on your own. There is no cost to the individual candidate, fees are paid by the employers.

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Don't Wait for Career Planning

According to recruiter Andrew Sherwood of Goodrich and Sherwood Associates, only 3 percent of us take time to plan our careers before we encounter a work crisis. Here's his advice:

Define your strengths and priorities

Honestly assess both your real and desired expertise in specific areas—technical skills, supervision, management, problem-solving, leadership. Know which of these are more important to you, and whether you want your present employer to help you acquire or express them.

Examine your current options

Talk with your peers, mentors, managers, and with the organization's human resources and career-development staff, if there are any. Identify potential paths within the enterprise toward your career goals. Look at other cases to see if those paths actually exist in practice. Has anyone ever done it before?

Develop your assets

Don't pass on any opportunity to learn new skills, ideas and concepts, whether from formal training, self-study, or sharing information with colleagues. Also, don't neglect chances to teach your knowledge to others and thus demonstrate your value.

Get feedback

Seek the assessments of both peers and managers; with every completed project, ask how you did and what could be done better. Use your regular performance reviews to your advantage; ask for the opportunity to help set your own objectives, and help focus your boss's attention on your career prospects.

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University of Maryland School of Pharmacy

Interactions…

Lucy and the Pharmacist

Remember the classic I Love Lucy episode where Lucy Ricardo and her intrepid sidekick, Ethel Mertz, somehow became trapped in a candy factory and were forced to pack bon-bons in boxes? The candies streamed by in front of them relentlessly—borne on an endless conveyor with no pause or breaks. After working successfully for a while, our heroines get out of rhythm. Candy drops to the floor; boxes fall over; Lucy hits the switch to stop the conveyor. It only speeds up! Pandemonium results and the episodes ends with Lucy buried under a heap of chocolates delivered by the conveyor belt from Hell!

Unfortunately, a similar situation may be looming in your neighborhood pharmacy. The recent explosive growth in prescriptions threatens to overwhelm the supply of pharmacists. If the situation is not corrected, the results will not be high comedy, but inconvenience to patients, a threat to proper medication use and, ultimately, to patient safety.

During the 1990s, the number of prescriptions dispensed in the nation's pharmacies doubled from one billion to two billion a year by 1997. Last year the figure reached three billion and the four billion mark is expected in 2004.

With this growth, it is no surprise that your neighborhood pharmacy prescription department resembles Lucy's candy factory. The prescriptions just keep coming! But unlike candy, prescriptions require personal and professional attention. The pharmacist cannot just stop the conveyor to explain to the first-time mother that the antibiotic syrup for her baby's earache must be taken in a certain way; the doses must be given at prescribed intervals; and the entire bottle must be used up even if the baby seems better. This takes time, while the conveyor keeps running.

Then there's the elderly patient with five prescriptions from three different specialists. The patient needs the directions sorted out and the pharmacist must make sure that there will be no unanticipated interactions caused by orders from the different physicians. Today's computers alert pharmacists to these potential problems, but the resolution must be handled individually.

Then there are patients with insurance problems. The HMO may not cover the medication the physician ordered (shades of "Rex Morgan, MD"!). Or the patient has been laid off and the employer-based health insurance no longer covers him. Or the patient has no prescription drug coverage at all and is faced with a pressing need for an important medication but no money to pay for it. These problems take time to resolve. The conveyor keeps running!

Dispensing prescriptions is only one responsibility of modern pharmacists. Helping to manage therapy is increasingly important as medications become more potent and specific. For example, as hospitals focus more on providing high-level intensive care to very sick patients, drug therapy is key. Pharmacists play an important role in the proper use of these complex medications. Wherever you find sick people, you find medications and pharmacists ensuring their safe and effective use. Nursing homes, assisted living facilities, hospice, clinics, HMOs, ambulatory care centers—pharmacists are found in all of them.

Although the supply of pharmacists has been slowly increasing, it has not kept up with the demand for services. Pharmaceutical education requires a four-year professional program, following two years or more of undergraduate study, culminating in a state licensing examination. Although computers and automation help, as do properly trained technical support, an appropriate supply of pharmacists is essential. A newly-released federal study verifies that a national shortage of pharmacists indeed exists. Therefore, we must now move on to increase the supply of pharmacists by increasing the capacity of our pharmacy schools and attracting a larger and more diverse group of students to the profession.

Medications have long been the most preferred treatment for what ails us by patients and prescribers alike. But with thousands of individual products on the market, accompanied by a flood of hype about each, obtaining our preferred treatment is difficult. We must strengthen the profession that is devoted to the proposition that you should receive the right drug, for the right condition, at the right time and for the right price. An accelerating conveyor belt laden with prescriptions but with not enough pharmacists to cope is a situation we must correct now!

The University of Maryland School of Pharmacy—the state's only pharmacy school—must be able to increase its output of pharmacy graduates to meet the needs of the state. But that is not possible because of the inadequate size of our space and facilities. As a state-supported School of Pharmacy, tuition meets only a portion of the budget. Careers in pharmacy are affordable because of state support. But it is vital to assure that proper space and facilities are available to make it possible for the School to expand. The University System of Maryland and the Governor have included a new pharmacy building in state's capital budget, but not for another several years. Unless this building is built much sooner than that, the supply of pharmacists in Maryland cannot be significantly expanded before the end of this decade. That's too long to watch the conveyor continue to run in today's Maryland pharmacies.

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Continuing Education for Pharmacists

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Patient Counseling: Treatment of Dry Mouth

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

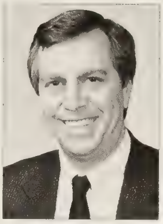
J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals. The goals of this lesson are to describe the function of saliva and the causes of dry mouth, and provide information relevant to counseling patients on its treatment.

Objectives. At the conclusion of this lesson, the participant will be able to:

1. identify the function of saliva;
2. recognize the causes of and dangers associated with chronic dry mouth; and
3. demonstrate an ability to counsel patients on the treatment of dry mouth.

Gossel



Wuest

Dry mouth (*xerostomia, asialia*) is an affliction of aging reported in approximately 10 percent of persons over the age of 50, and 40 percent of those over 65. It is also a side effect of various drugs.

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Some individuals may view dry mouth as a simple nuisance and accept it rather than seek professional assistance. Chronic dry mouth, however, is a major health concern. Saliva is more than just spittle to be swallowed or expectorated. Serious oral, dental and systemic pathology can follow chronic deficiency. Dry mouth is reported to be the underlying cause of tooth and gum disease in 30 percent of adults.

This lesson discusses the physiologic role, importance, and composition of saliva, and describes the causes of dry mouth. It elaborates on treatment, including OTC saliva substitute products and pharmacologic agents that stimulate saliva flow. Specific information for pharmacists to convey to sufferers of dry mouth is also provided.

Saliva

Saliva is a mixture of secretions from the salivary glands. It is a complex solution (Table 1) composed of plasma, electrolytes, and a variety of proteins including enzymes, antibodies and mucins (sugar-rich proteins).

There are two types of saliva: *serous*, produced by the parotid, sublingual and submaxillary glands, representing the larger volume of fluid; and *mucous*, produced by the buccal, lingual, labial and palatine glands, secreted in lesser amount. Approximately 1500mL of saliva are secreted daily by adults.

Parasympathetic (cholinergic) stimulation induces copious secretion of both serous and mucous saliva. Sympathetic (adrenergic) stimulation results in release of lesser volumes of concentrated saliva by constricting blood vessels supplying the major salivary glands. Dry mouth results when the secretion of saliva is diminished or arrested.

The function of saliva is to moisten, cleanse, and lubricate mucous membranes and teeth, and assist swallowing and digestion of food. It helps neutralize acids

Table 1
Activity of Saliva

Function	Saliva Components
Antibacterial	Lysozyme* Lactoperoxidase* IgA**
Buffering	Bicarbonate, phosphate
Cleansing	Physical flow
Lubrication	Glycoproteins, mucoids
Physical protection	Glycoproteins, mucoids
Tooth integrity	Minerals Glycoprotein pellicle***

*Enzymes destructive to certain oral bacteria
**Antibody; inhibits attachment of oral streptococcus organisms to epithelial cells
***Thin, protective film covering

Table 2
Drugs Reported to Cause Dry Mouth

Analgesics
Antianxiety agents
Antiarrhythmics
Anticholinergics
Anticonvulsants
Antidepressants
Antiemetics
Antihistamines
Antihypertensives
Antineoplastics
Antipruritics
Antispasmodics
Appetite suppressants
CNS stimulants
Decongestants
Diuretics
Dyskinetics
Muscle relaxants
Opioids
Phenothiazines

produced by bacteria that promote tooth decay.

Saliva contains enzymes and antibodies which retard bacterial function and growth. Diminished salivary flow lowers the pH of the oral cavity which encourages overgrowth of bacteria that thrive in an acidic medium. This may result in increased growth of microorganisms including lactobacillus, *Streptococcus mutans*, *Candida albicans*, and *Actinomycetes naeslundii*. Much of the tooth and gum diseases that occur from chronic dry mouth result because of a loss of protective salivary electrolytes and immunoproteins.

Saliva also helps stimulate taste buds. Taste sensations occur when substances are moistened and dissolved. Without saliva to moisten solid food, it would be bland and possibly tasteless.

Dry Mouth

Dry mouth is not one specific disease entity, but a symptom that results from a variety of underlying pathologies. These include uncontrolled hypertension, hyperlipidemia, Alzheimer's disease, Addison's disease, depression, and generalized dehydration. Dry mouth may also result from diabetes mellitus or Sjögren's syndrome (described later). Onset of chronic dry mouth is oftentimes insidious, developing over many years. In fact, it may appear so slowly that the individual may be unaware of symptoms for a period of time. Some people who complain of dry mouth have functionally-intact salivary glands with adequate saliva flow. This emphasizes the importance of careful diagnosis.

Functional dry mouth is temporary, and occurs when the salivary glands are otherwise functioning normally, but saliva flow is decreased or inadequate. Mouth breathing from nasal obstruction, stress and anxiety causes this condition.

The cause of functional dry mouth may also be iatrogenic (drug-induced). See Table 2. This situation may be managed adequately by decreasing the dosage of the offending (i.e., xerogenic) agent, or changing the medication to an alternate drug that has less drying potential. Patients taking a tricyclic antidepressant, for example, may be switched from one with strong anticholinergic activity, such as amitriptyline, to another with less anticholinergic activity, such as desipramine, or more likely placed on one of the serotonin-specific reuptake inhibitors which do not cause anticholinergic effects.

Patients on antipsychotic drugs such as perphenazine or trifluoperazine, that have strong extrapyramidal effects, may require antiparkinson agents such as benztropine or trihexyphenidyl to overcome these effects. Adding these anticholinergic drugs may cause dryness of the oral cavity. Switching the patient to alternate antipsychotic medication such as thioridazine or molindone may solve the problem, because these usually do not require secondary treatment with antiparkinson agents.

Symptoms of dry mouth frequently diminish in intensity after a week or two of anticholinergic drug therapy, although they may persist to some degree throughout treatment. Dry mouth is often the dominant anticholinergic adverse effect, remaining after other effects such as decreased sweating, difficult urination and blurred vision have been resolved.

The problem of iatrogenic dry mouth increases with age. As stated earlier, dry mouth occurs more often in older persons, and the drugs that may cause it are those which are used more commonly by the elderly.

Organic dry mouth is permanent, and may result from one of the underlying disorders listed earlier, including Sjögren's syndrome. This is an autoimmune disorder of the salivary glands that may affect two to four million persons in the U.S., many of whom are undiagnosed. Sjögren's syndrome is more common in persons over age 50. Nine out of 10 patients with the affliction are women.

Afflicted individuals have serum auto-antibodies that react with salivary and lacrimal duct proteins. Sjögren's syndrome is associated with three major conditions: xerostomia, keratoconjunctivitis sicca (a condition marked by corneal thickening and dryness, suppressed lacrimation and decreased visual acuity), and in one-half to two-thirds of patients, rheumatoid arthritis.

Organic dry mouth may also follow exposure of the oral tissues to radiation used to treat malignant neoplasia.

Symptoms

Sufferers of chronic dry mouth complain of a parched, burning sensation. They may experience initial symptoms of mild stomatitis (inflamed oral mucosa) or gingivitis (inflamed gums). Their oral mucosa appears dehydrated and red. Fissures appear, and the tongue and lips may become dry, crack and bleed.

In advanced cases, individuals may develop painful ulcerations of oral tissues leading to microbial invasion with resulting septicemia.

They may have difficulty chewing, swallowing and eating, as well as speaking and singing. Degenerative changes appear in the creases of their tongue resulting in loss of taste perception. Sore throat may be persistent.

Saliva is essential for removing food and debris from the teeth and gums. Its absence causes food to accumulate and leads to heavy plaque formation, dental caries and periodontitis (inflammation of the supporting tissues of the teeth). Bad breath is also common.

Denture wearers are particularly troubled. Saliva is required to assure denture stability and correct fit. Reduced lubrication and resultant tissue shrinkage associated with chronic dryness causes constant irritation to tissues under the dentures. The dentures may loosen and not fit well. Mastication (chewing of food) becomes difficult. Because food becomes trapped underneath, the dentures must be cleaned frequently and mouth odor may be intense.

Because the gums are tender, affected individuals may choose to wear their dentures for shorter periods each day. Oral hygiene is compromised even more as caries develop in remaining teeth and periodontal disease appears. These persons often switch to softer diets with higher carbohydrate content. This eventually leads to adverse nutritional effects overall.

Treatment

Treatment of chronic dry mouth is largely palliative with measures designed primarily to compensate for reduced salivary flow. This includes OTC saliva substitutes, or parasympathetic stimulants (parasympathomimetics, cholinomimetics; sialogogues) such as pilocarpine or cevimeline. (Table 3)

Parasympathomimetic Drugs

At the time of writing this lesson, two drugs are approved for oral administration in treatment of dry mouth. They are pilocarpine (Salagen) and cevimeline (Evoxac). Classed as parasympathomimetics, they stimulate the salivary glands through activation of cholinergic fibers.

These orally-administered drugs may cause significant adverse effects that include increased tearing and sweating, enhanced gastrointestinal secretions and laxation, increased urinary frequency, bradycardia and lethargy.

Saliva Substitutes

The OTC artificial saliva substitutes are promoted as having components and properties similar to natural saliva. Saliva substitutes may reduce some of the symptoms of xerostomia and provide significant patient comfort.

The products contain agents such as glycerin, carboxymethylcellulose and methylcellulose which provide proper viscosity. Minerals, including calcium and phosphorus which are normally found in saliva, are included. These may be important especially in remineralizing lesions that are in the early stages of formation. Some products contain fluoride. The proprietary products do not contain antimicrobial substances or digestive enzymes of natural saliva, but they mimic its protective properties.

Hypersensitivity reactions have been reported to products that contain parabens. Sensitive individuals may choose to use a product (i.e., Salivart) that is packaged in a pressurized aerosol to maintain sterility without preservatives.

Sorbitol, a sugar alcohol, is used as a flavorant and humectant. Sorbitol product labeling may state that these items do not promote tooth decay. Persons with diminished salivary secretion who use saliva substitutes containing sorbitol may still experience an adverse effect since sorbitol is fermented by the same oral microflora that leads to development of caries.

Home Remedies

A variety of methods for increasing moisture levels in the mouth have been advocated. These include sipping water or thin soup; sucking on ice chips, dill pickles, or hard, sugarless candies; chewing gum; dissolving lozenges containing gelatin, glycerin, and/or lemon in the mouth; and rinsing the mouth with commercial mouthwashes or solutions of mouthwash mixed with equal volumes of mineral oil or glycerin. Affected individuals may rinse their mouth with mixtures containing salt, diluted milk of magnesia, sodium bicarbonate, and hydrogen or carbamide peroxide to help debride the oral epithelium and relieve irritation.

These procedures may provide temporary relief of oral discomfort. They must be employed frequently and are not always effective.

Some dentists may recommend that patients keep a toothpick in their mouth. The presence of a foreign object in the mouth helps stimulate saliva flow. Additionally, the person can use the toothpick adjunctively to oral hygiene procedures after eating.

Counseling Patients on Dry Mouth

Individuals with dry mouth should be questioned about their use of

Table 3
Commercially Available Products for Dry Mouth

OTC Saliva Substitutes
Entertainer's Secret Spray
Glandosane Spray
Moi-Stir Spray
Moi-Stir Swabsticks
Mouthkote Solution
Optimoist Spray
Roxane Saliva Substitute Solution
Salivart Spray
Salix Lozenges

Prescription Drugs
Evoxac (cevimeline) 30mg Capsule
30mg three times a day
Salagen (pilocarpine) 5mg Tablet
5mg three times a day

Table 4
Patient Advice for Dry Mouth

- Chew sugarless gum or suck on hard sugarless candy or ice chips to help make your mouth feel more comfortable.
- Drink at least eight to 10 glassfuls of water each day. Take sips of additional fluids frequently throughout the day and before, during and after each meal.
- Eat foods like carrots, celery, and other items that require lots of saliva-generating chewing.
- Use a vaporizer or humidifier to add moisture to the air you breathe.
- If you smoke, reduce the frequency or stop smoking completely.
- Avoid beverages containing alcohol and caffeine, and highly-spiced bulky and dry foods, and condiments; moisten dry and coarse foods with a liquid before placing in your mouth.
- Try not to breathe through your mouth. If you are congested, ask your pharmacist or doctor to recommend a decongestant that will not aggravate your dry mouth further.
- Avoid using OTC mouthwash products that have high alcohol content or contain detergents. Your pharmacist can help you choose appropriate products.
- Ask your pharmacist to recommend an OTC saliva substitute product, and use it as often as needed to keep your mouth moist. Carry a supply with you at all times. Although artificial saliva products make your mouth feel more comfortable, they are not a cure for your condition.
- Apply a lip balm or petroleum jelly to your lips to help reduce drying and cracking.
- Do not use any systemic prescription or nonprescription medication without first checking with your pharmacist or doctor. Some may aggravate your dry mouth.
- Use a cold weather mask or cover your mouth and nose with a scarf when working or exercising outdoors in extremely cold weather.
- Follow your dentist's or doctor's advice on adhering to your nutritional and oral hygiene programs. Have regular dental examinations, preferably every four to six months or more often if necessary.

prescription and nonprescription medications. If their condition is sufficiently severe to cause persistent discomfort and they are taking a drug listed in Table 2, their physician may be contacted to recommend alternative therapy. A reduction in dosage or alteration in drug prescribed may be helpful. These individuals can also be instructed to follow the general guidelines outlined in Table 4.

Dry mouth sufferers should be urged to maintain a good oral health care program. This includes adequate oral hygiene measures with brushing and flossing faithfully, regular dental examinations, and nutritional counseling.

Individuals should be cautioned to limit intake of candy and confections that contain sucrose. The combination of sucrose and dry mouth can accelerate dental caries formation. Likewise, mouthwash products that contain detergents should be avoided since detergents can remove mucins from the oral tissues and worsen the condition. Products with high alcohol content should be avoided since alcohol promotes further drying of the mouth.

Saliva substitute products possess therapeutic advantages over home remedies and mouthwashes for increasing the moisture level in the mouth. They are palatable, have a relatively long duration of action, and are safe and effective for use over a long period of time.

Opportunities to promote patient oral health can be maximized by forming alliances with local dentists. Informing dentists of a willingness to stock artificial saliva products with emphasis on the specific brands these dentists prefer will be beneficial. Referring patients with dry mouth problems to dentists for further evaluation when these patients have severe or unresponsive dry mouth symptoms can strengthen the relationship.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Treatment of Dry Mouth." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 7/15/03. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-00-007-H01.

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The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. *Serous* saliva is produced by which of the following glands?
   a. Buccal
   b. Lingual
   c. Palatine
   d. Sublingual

2. *Mucous* saliva is produced by which of the following glands?
   a. Labial
   b. Parotid
   c. Parietal
   d. Submaxillary

3. Saliva produces all of the following functions EXCEPT:
   a. moistening, cleansing and lubrication of mucous membranes.
   b. assisting in swallowing and digestion of food.
   c. neutralizing of alkaline substances produced by bacteria.
   d. retarding of bacterial growth by the enzymes and antibodies in saliva.

4. Glycoproteins in saliva have all of the following activities EXCEPT:
   a. lubrication.
   b. buffering.
   c. physical protection.
   d. protecting tooth integrity.

5. The autoimmune disorder that results in insidious dry mouth is called:
   a. diabetes.
   b. Grave's disease.
   c. hypothyroidism.
   d. Sjögren's Syndrome.

6. Which of the following types of drugs aggravate chronic dry mouth?
   a. Anticholinergics
   b. Cholinergics
   c. Parasympathomimetics
   d. Sialogogues

7. Which of the following drugs stimulates the salivary glands?
   a. Evoxac only
   b. Salagen only
   c. Both Evoxac and Salagen
   d. Neither Evoxac nor Salagen

8. Sorbitol is used in saliva substitute products:
   a. to provide proper viscosity.
   b. as a flavorant and humectant.
   c. as a digestive enzyme.
   d. as a preservative.

9. Patients with dry mouth should be given all of the following advice EXCEPT:
   a. chew sugarless gum or suck on hard sugarless candy.
   b. drink at least 8 to 10 glassfuls of water daily.
   c. avoid foods like carrots and celery that require lots of saliva-generating chewing.
   d. use a vaporizer or humidifier to add moisture to the air.

10. A patient with dry mouth requesting a saliva substitute in lozenge dosage form should be informed about:
   a. Entertainer's Secret.
   b. Moi-Stir.
   c. Optimoist.
   d. Salix.

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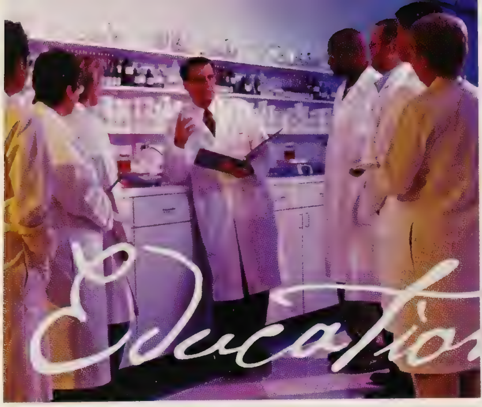

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MARYLAND Pharmacist

VOLUME 77, NO. 2

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  "Courage _ Still Needed"
- *Disease State Management*
  Can I Make a Difference?
- *Garlic*
  The Stinking Rose

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President's Commentary

"COURAGE—STILL NEEDED"

Murhl Flowers, P.D.
President

The motto for MPhA this year has been "***Dare to be Courageous***." My year as President is winding down and it is hard to imagine that it is almost over. We have tried to emphasize that pharmacists ***must*** have the ***courage*** to speak out in order to protect and improve pharmacy in Maryland.

This has been one of the most critical years ever for pharmacy in the legislature. A wide gamut of issues affecting pharmacy was being considered by our elected representatives—from a Universal Prescription Card to Drug Therapy Management and Increased Access to Prescription Medicines for Senior Citizens.

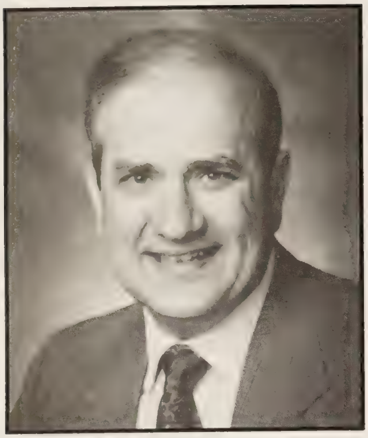
The Uniform Prescription Card passed both houses. For the second time, Drug Therapy Management did not pass. The Chairman of the House Committee has instructed pharmacy to work with Med Chi to bring an acceptable Bill back next year. However, this time we will have a State Delegate facilitating the discussions between pharmacy and the physicians. Hopefully, this will dramatically increase our possibility of success.

The passage of the Senior Prescription Drug Relief Act (HB6/SB236) fulfilled a public committment made by the General Assembly. It directs the Department of Health and Mental Hygiene (DHMH) to apply for a waiver to allow the purchase by uninsured Medicare recipients of prescription drugs at the Medicaid price minus the manufacturers' rebate plus a $1 processing fee for the pharmacy. The Act also provides for a MedBank program (free medications from manufacturers) and an expansion of the Short Term Prescription Subsidy program. It is the first time that the legislature has increased access to health care without also providing substantial state and/or federal funds.

We tried to stimulate interest in legislative activities by co-sponsoring the First Annual Pharmacy Legislative Day in Annapolis, along with MSHP and Md-ASCP. Almost 150 pharmacists and pharmacy students descended upon Annapolis to transmit pharmacy's position on the issues to the legislators. It was an impressive occasion. However, in the future, we need more pharmacists to exhibit ***courage*** by coming to Annapolis to bring the needs of pharmacy to their State Senators and Delegates.

A great number of pharmacists demonstrated their ***courage*** this year by testifying at hearings in Annapolis and by meeting with legislators. Your Board of Trustees also exhibited great ***courage*** by committing to the largest fundraising project in the history of the Association.

My year as President is almost over—it has passed by so rapidly. However, the need for ***courage*** will remain during the remainder of our careers. The challenge for each pharmacist is to rekindle the passion for pharmacy that we all had at one time. When each of us finds that passion, we will also find the ***courage*** to defend and fight for pharmacy in Maryland. When this occurs, Annapolis will not be able to withstand the onslaught from pharmacy and we will become the political force that we should be. Do you have the ***courage*** to be part of this onslaught for pharmacy?



Director's Column

2001 Session—Maryland General Assembly

Howard R. Schiff, P.D.
Executive Director

The 2001 session of the Maryland General Assembly finally ended on April 9, and it's time to count the pluses and minuses. Pharmacy had high visibility and pharmacists responded to pleas for involvement in great numbers. The First Annual Legislative Day was a huge success.

The Uniform Prescription Card measure (HB 807/SB 686) was passed by both Houses and, at the time of this writing, and is awaiting the Governor's signature. As described in the last issue of the Maryland Pharmacist, what we considered a no-brainer still took two years to explain to legislators, administrators and insurers. Medicaid managed care organizations, after regulations are issued by the Department of Health and Mental Hygiene, are included under the bill.

Therapy Management Agreements (SB 772) (a.k.a. collaborative practice) drew stiff opposition from organized medicine and passed the Senate, but was stuck in the House Committee as the Chairman tried to get agreement between the various interest groups. He let the bill die in the committee rather than risk its defeat on the floor. He stated firmly his intention to pass legislation next year and instructed the stake holders to meet before the next legislative session and come to agreement.

Prescription drugs for the elderly and uninsured was the dominant economic theme in this year's legislative season. Of all the bills we tracked, more than half were concerned with this issue. The Governor, believing it was a federal problem, had no money in his budget for prescription drugs. Still, every committee hearing on these bills was jammed pack with concerned citizens. There were so many bills that they were heard in groups instead of individually. The final bill (HB 6/SB 236) was less damaging to pharmacies than what could have been enacted. To cover uninsured Medicare recipients up to 250% of the federal poverty level, the State will apply to the Federal government for the "Vermont" waiver which will require pharmacies to dispense prescriptions under the Maryland Pharmacy Assistance Program at the Medicaid price minus manufacturers' rebate. Pharmacies will receive a $1 processing fee per prescription plus the Medicaid fee for one year. After that year there will be a study to determine the impact on pricing and pharmacies' profit margins. Additionally attached to the processing fee is a pharmaceutical care management section. The bill also contains alternative plans if the waiver is denied, a plan for free drugs through manufacturers' programs (MedBank), and modification of the Short Term Prescription Subsidy program that was passed last year. Premiums for this program have been cut and deductibles eliminated to increase participation. What is unclear at this time is to what extent the bill will affect long term care pharmacy.

There was a bill in the legislature on medication errors (HB1307). This bill could be particularly burdensome to pharmacists because it requires mandatory reporting. On Legislative Day, several MPhA members met with the author of the bill and arranged a meeting with State Board members. The result was that the bill was changed to a report by the Board of Pharmacy Errors Task Force to the Legislature by January 2002.

Although there are minuses on the economic side, the pluses on the professional side are important. We are getting more respect and events like Legislative Day increase our visibility. The profession is united, and with the enthusiasm shown this year, we should make more progress next year.

Disease State Management: Can It Make A Difference

Disease state management. The phrase is well known—but, what exactly does it mean? First coined in 1993, the term "disease management" was used by the Boston Consulting Group in reference to the pharmaceutical industry, and has since grown and evolved as a formidable approach to managing patient care across the continuum. Who should perform or conduct it? And, should it be physicians, pharmacists, nurses or case managers who direct a disease state management program? Which patients and which diseases respond to such programs? These and many more questions are being asked by pharmacists and others from all across the country.

For the better part of the last decade, pharmacists have been hearing about the benefits of disease state management (DSM) programs. Researchers noted that several diseases should be targeted including diabetes, asthma, hyperlipidemia, pain management, anticoagulation and hypertension.

According to nurse-turned case manager Sharyn S. Lee, R.N., M.S., the term disease management is "a systematic, proactive case management model that uses an organized approach to provide early intervention along the care continuum. Disease management seeks to have patients actively participate in maintaining their optimum state of health, as opposed to being passive observers." ("New Trends in Disease Management," *Continuing Care*, V15N7, July-August, 1996, pg. 37) Disease state management programs typically employ a multi-disciplinary team and provide a spectrum of services along the continuum, making it transparent for the patient.

The Asheville Project

One of the first true disease state management programs offered in the "public" sector was the Asheville Project. This program focused on improving outcomes for Asheville (N.C.) city employees suffering with diabetes. This program was instituted in Asheville early in 1997. The City of Asheville agreed to partner with the North Carolina Center for Pharmaceutical Care (NCCPC), which had been formed to plan and implement these projects. NCCPC offered training to community pharmacists in diabetes management and implemented a program which provided pharmaceutical care services for city employees with diabetes. These services were offered for the first six months at no charge to the city. Then, if measurable clinical and financial improvements could be demonstrated, NCCPC would negotiate with the city for payment for the services. The city agreed to offer incentives for employees with diabetes to participate in this "wellness program." These incentives included waiving employee co-payments on all diabetes-related medications and supplies. The City of Asheville also agreed to pay 100 percent of the cost of a formal diabetes education program offered by the Education Center of Mission St. Joseph's Health System (MSJ). Employees who enrolled in the program agreed to go through this formal diabetes education program if they had not previously had formal education, or if it had been more than two years prior. City employees also agreed to meet on a regular basis, usually every month, with one of the specially trained pharmacists, whom they selected from a list of those who had gone through the training. Pharmacists who were interested in participating in the project agreed to receive training in the management and monitoring of diabetes. Pharmacists also agreed to the arrangement of providing pharmaceutical care services at no charge for six months. The original training program attracted twenty-four pharmacist participants who went through a two weekend, thirty-two hour, program in diabetes.

Average hemoglobin A1c results for city employees decreased from 7.6% to 6.2%. Total cholesterol averages dropped from 210mg/dl to 198 mg/dl. The LDL average decreased from 118 mg/dl to 98 mg/dl. All of these averages exceeded the American Diabetes Association goals of <7% for hemoglobin A1c, <200 mg/dl for total cholesterol, and <100 mg/dl for LDL. Health status and satisfaction with pharmacy also improved significantly. In addition, the city spent nearly $20,000 less on total health care costs for these employees during the first year of the program compared to the previous baseline year. Equally impressive were the findings that the average participant worked 6.5 more days during the project year compared to the prior year. The city quantified the monetary value of this at approximately $18,000.

The diabetes management program was so successful that the City of Asheville began compensating pharmacists for their services prior to the negotiated six-month deadline. The city also established a pharmacist based asthma management program. In May of 1997, twenty-one pharmacists participated in a certificate program in asthma care management, and in November, 1997, enrollment began for city employees with asthma. As of January 1, 2001, there are 165 patients being followed by program pharmacists, 121 with diabetes and 44 with asthma. Twenty-two pharmacy locations in the greater Asheville area provide these services and 65 individual pharmacists have been trained. Many pharmacists have participated in both diabetes and asthma training, and a number of trainees have been from outside of the Asheville area and several pharmacists from other states have been trained.

The significance of sustained two-year improvement cannot be overemphasized. It is extremely important for pharmacists to not just *demonstrate* their ability to improve clinical parameters; education alone can do that, but to demonstrate that a *pharmacist-patient relationship* can sustain this improvement. After all, one of the goals of the Asheville Project was attempting to prove that pharmaceutical care is a cost-effective intervention that will reduce long-term complications of diabetes. Risk reduction is something that is not attainable without prolonged improvement in blood glucose control. Unfortunately, this level of control is often associated with high resource, high expense programs. Notably, the 1,400 patient, 10 year, landmark Diabetes Control & Complication Trial (DCCT) stated in their concluding paragraph, "Intensive therapy was successfully carried out in the present trial by an expert team of diabetologists, nurses, dietitians, and behavioral specialists, and the time, effort, and cost required were considerable. Because the resources needed are not widely available, new strategies are needed to adapt methods of intensive treatment for use in the general community at less cost and effort." If someone were searching for a simple description of community based pharmaceutical care it could easily be referred to as a "new strategy, widely available, in the general community, at less cost and effort." And, at two years, the Asheville Project results continue to exceeded ADA goals by using "widely available resources" with relatively little "time, effort, and cost."

Project ImPACT: In preliminary results in 469 patients who had continued in the project for an average of 14 months, observed rates for persistence and complieance with medication therapy were 84.0% and 84.3% respectively, and 44.3% of the patients had reached their National Cholesterol Education Program (NCEP) lipid goals.

APhA's Project ImPACT

Project ImPACT (Improve Persistence And Compliance with Therapy) focused on hyperlipidemia in a community pharmacy-based cholesterol management program. The two-year project is under the direction of the APhA Foundation and is funded by Merck Human Health Division.

The pharmacists who have been selected to participate in the project will use the Cholestech L•D•X® desktop system to monitor cholesterol levels with a Lipid Profile test that uses a whole blood sample from a fingerstick or capillary blood test. The Cholestech L•D•X System also calculates individualized cardiac risk factors from data that is input into a formula based on data from the Framingham Heart Study. The availability of results and risk factor information allows the pharmacist to be directly involved in the management of lipid-lowering therapies and patient outcomes. The primary objective of the demonstration project is to document that pharmacist intervention using the Cholestech L•D•X Analyzer in the management of patients with lipid disorders has a positive impact on patient medication compliance and persistence that will ultimately result in a greater number of patients reaching their target lipid goals. If the patients reach and maintain these target lipid goals, it is assumed that cardiovascular-related risk factors will be reduced, resulting in positive health care outcomes.

The program had several objectives including: 1) To demonstrate ability to utilize the Cholestech L•D•X Analyzer in a community practice setting; 2) To demonstrate ability to document the pharmacist's lipid management interventions using manual and/or automated intervention programs; 3) To measure patient compliance and persistence with lipid lowering medication; 4) To measure impact on individual cholesterol levels over time and number of patients reaching/maintaining target lipid levels; 5) To measure impact of pharmaceutical care on Framingham risk factors over time; and 6) To evaluate patient satisfaction with pharmacist interventions in lipid management. Thirty-two pharmacy practice sites were selected to participate in the project. Each site will be asked to enroll and monitor 30 new-to-lipid-therapy patients over a two-year period.

As of spring 1998, pharmacists at 29 of the original 32 sites were continuing to conduct cholesterol testing and provide this patient-focused disease state management service in their practice. In preliminary results in 469 patients who had continued in the project for an average of 14 months, observed rates for persistence and compliance with medication therapy were 84.0% and 84.3% respectively, and 44.3% of the patients had reached their National Cholesterol Education Program (NCEP) lipid goals.

Virginia Medicaid

The State of Virginia created the Virginia Health Outcomes Partnership (VHOP) program which is a model Medicaid disease management program that integrates health care services for patients with chronic conditions. It is one of the first Medicaid disease management programs in the nation. The goal of the program is to produce the best treatment outcomes while reducing overall costs. The program was proposed by Virginia's Department of Medical Assistance Services. Medicaid leaders were looking for an alternative to prior drug authorization programs and restricted formularies. The agency sought an alternative that would improve drug dispensing and effectiveness.

The VHOP focused on the management of asthma patients. The results were dramatic—reduced use of emergency and urgent care services by Medicaid patients and increased the appropriate use of asthma medications. The results from the program are among the first to demonstrate that disease management benefits Medicaid patients, many of whom have chronic illnesses that respond well to disease management interventions.

Researchers found an average 42 percent reduction in the expected rate of asthma emergency claims in the third to fifth quarters after the introduction of the disease management pilot program. The rate for the third quarter alone was 47 percent lower than expected. According to the study calculations, if VHOP had been implemented statewide for all primary care case management physicians during the five post intervention quarters, it could have saved as much as $1.2 million in spending for emergency claims.

Florida Medicaid

Florida uses a disease management organization approach that aggressively applies state-of-the-art techniques to outcomes improvement through a collection of vendors with specialized expertise in the diseases they are responsible for addressing.

Looking for ways to challenge Florida's growing cadre of health maintenance organizations to adopt quality improving approaches to care, leaders in Florida's Medicaid program thought that disease management applied to the right Medicaid diseases might be the answer. In 1997, Florida's Medicaid agency was authorized by the legislature to develop a disease management program.

Several approaches to disease management are being tried by the vendors selected to deliver disease management in Florida. The diseases selected are asthma, HIV infections or AIDS, hemophilia, diabetes, end-stage renal disease, congestive heart failure and hypertension. The Medicaid agency coordinates the outreach efforts with physicians, pharmacists and other providers. The disease management organizations receive a list of physicians who treat patients with the identified diseases. The physicians with identified patients were contacted to enlist their assistance in encouraging eligible patients to voluntarily enroll in the disease management program. According to *DRUG TOPICS*, "the dice aren't expected to stop tumbling until the initial bottom-line reports start coming in during the first quarter of 2001."

The Future of DSM

As pharmacists become more involved in providing direct patient care such as screening and monitoring via capillary blood testing and immunizations, the opportunities for pharmacist participation in DSM programs will continue to grow. Several Georgia pharmacists and active GPhA members are actively involved in DSM services and are being compensated by patients, insurers and managed care plans. If the system can continue to demonstrate the results which have been documented in the DSM programs highlighted in this article, the future of such programs will likely continue to attract new patients, new practitioners and provide new opportunities.

By Wayne W. Oliver, J.D., Vice President Professional Relations and Governmental Affairs, Georgia Pharmacy Association
Reprinted with permission

Pill Tiles

This is one of several fund raising efforts by the Maryland Pharmacists Association Foundation to refurbish the Kelly Memorial Building.

Only a few pharmacists still use pill tiles in their daily practice. In fact, many who compound ointments use sheets of paper rather than the traditional square tile.

Now you can purchase your own personalized pill tile. These tiles can be personalized with your name or message. It is a fitting way to commemorate yourself, a loved one, or an event. The pill tiles will be displayed in the refurbished Kelly Memorial Building.

For more information, call the MPhA office at 410-727-0746 or 800-833-7587.

Thank you for your support!

How to Survive a Heart Attack When Alone

Let's say it's 6:15 p.m. and you're driving home (alone of course), after an unusually hard day on the job. You're really tired, upset, and frustrated. Suddenly you start experiencing severe pain in your chest that starts to radiate out into your arm and up into your jaw. You are only about five miles from the hospital nearest your home; unfortunately, you don't know if you'll be able to make it that far.

What can you do? You've been trained in CPR, but the guy that taught the course neglected to tell you how to perform it on yourself.

Since many people are alone when they suffer a heart attack, this articles seemed to be in order. Without help, the person whose heart stops beating properly and who begins to feel faint has only about 10 seconds left before losing consciousness. However, these victims can help themselves by coughing repeatedly and very vigorously. A deep breath should be taken before each cough, and the cough must be deep and prolonged as when producing sputum from deep inside the chest. A breath and cough repeated about every two seconds without letting up until help arrives or until the heart is felt to be beating normally again. Deep breaths get oxygen into the lungs and coughing movements squeeze the heart and keep the blood circulating.

The squeezing pressure on the heart also helps it regain normal rhythm. In this way, heart attack victims can get to a hospital.

Tell as many people as possible about this life-saving method. It could save their lives!

This article was taken from: Health Cares, Rochester General Hospital, via Chapter 240's newsletter AND THE BEAT GOES ON...

Naturally Healthy

Counseling Guide for Pharmacists

Compliments of Pharm/alert®

Garlic: The Stinking Rose

Garlic has been used as a food and medicinal agent for more than 4,000 years. Reference to its medical use appears in *The Codex Ebers* (an Egyptian medical papyrus from about 1500 BC), as well as in the writings of Hippocrates, Herodotus, Pasteur, and Albert Schweitzer, among others.

Folklore claims that garlic would keep vampires and other blood-suckers away. Its earliest clinical use was probably as a protective agent against febrile illnesses such as plagues and other infectious diseases.

During the Middle Ages, Benedictine monks in Europe grew garlic to prevent and treat communicable diseases. Extracts were used topically to prevent gangrene during World War I; and in World War II, it was referred to as "Russian Penicillin."

Scientist have identified at least 200 components of garlic, including vitamins, amino acids, proteins, lipids, trace elements, and enzymes.

Fresh garlic, garlic juice, and/or dried powder formulations can inhibit the growth of several bacterial species and, in some cases, the growth of bacteria that have developed resistance to standard antibiotic drugs.

Over the last 100 years, more than 1,200 scientific publications have described an extensive range of potential uses for this herb, including intestinal parasites, high cholesterol, bacterial infections, excess blood clotting, high blood pressure, fungal infections, and atherosclerosis, among others. However, since garlic has not been rigorously assessed in all of these conditions, patients should always consult a physician before using garlic as a medicinal agent.

In *The Complete German Commission E Monographs*, garlic is indicated for the prevention of age-dependent blood vessel changes and the reduction of elevated blood lipids; approved products are required to deliver the equivalent of 4,000 mg fresh garlic (approximately one to four cloves).

On the whole, garlic has minimal toxicity at the doses commonly recommended. For some people, garlic causes gastrointestinal upset and irritation and, for others, an unpleasant odor of the breath and skin.

Although uncommon, low blood pressure has been reported, as have rare allergic reactions. Also, because garlic reduces platelet stickiness, people who are taking blood-thinning drugs should avoid taking garlic supplements.

For more information, contact The American Botanical Council (512-926-4900) or the Herb Research Foundation (800-748-2617).

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Examination	Application Deadline
July 14, 2001	May 18, 2001
November 10, 2001	September 14, 2001

Dedicated Delegates

(L to R) Drs. Magaly Rodriguez de Bittner, Macary Weck, and Cynthia Boyle colorfully represented MPhA at APhA 2001.

Why would three Maryland women visit San Francisco, March 17-20, 2001, and chose to spend between ten and twenty hours serving as MPhA delegates to the APhA House of Delegates? There were definitely choices to be made among excellent continuing education programs, city tours, Fisherman's Wharf, and the duties of delegates. Actually, our delegation was able to do all of the above, but for those of you who have not participated in the House of Delegates, we found the policy and new business process to be time-consuming, but interesting.

Just as in MPhA, the APhA House of Delegates determines the policy of the organization and sets the agenda for the officers, trustees, and paid professional staff for the coming year. This year about a month prior to the convention, each delegate received a packet of proposed policy materials to be reviewed before consideration at the first of two House of Delegates sessions. Those packets represented many hours of preparation by the active academies and committees of the House. Key policy issues were administrative contributions to pharmacists' workload and medication error, credentialing and payment for pharmaceutical care, prescription order requirements, and a comprehensive review of existing APhA policy regarding the pharmacy workplace environment. Another key function of the House of Delegates is selection of the Speaker, which began at the first session with brief statements from the three candidates, who campaigned at school receptions, academy meetings, and social gatherings until the final session.

Only a delegate can introduce a new business item. Some are submitted prior to the convention, but mine was drafted at a breakfast for the APhA Foundation. Before submitting the new business item to the House of Delegates Office, I had a chance to get some feedback on the proposal from Executive Vice President John Gans, President-Elect Janet Engle, and Policy and Legislative Liaison Susan Winckler. Because of my work with the pharmacy student recruitment programs at the University of Maryland School of Pharmacy, and because I believe pharmacy practitioners and pharmacy students are the most compelling recruiters, I submitted the following new business item: *APhA will partner with AACP (American Association of Colleges of Pharmacy) to develop joint programs to aid colleges and schools of pharmacy in recruiting pharmacy students.*

To get a new business item to the floor of the House of Delegates, a delegate must be prepared to testify before the New Business Review Committee, which holds open hearings before adjourning to a closed session to deliberate. Delegates may speak to their own proposal to persuade the committee's action or may offer comment on any new business item being considered. There is some suspense, between testimony on Sunday and the final House of Delegates session on Tuesday, waiting to hear the committee's recommendat-ion to refer, to adopt, or to reject each new business item. While attending the APhA-Academy of Pharmacy Practice and Management (APhA-APPM) caucus on Tuesday morning to lobby for support for my new business item, I was pleased to hear that the committee had recommended referral of my proposal to the APhA Board of Trustees for action and allocation of resources!

It is important to mention the role of the APhA academies, and APhA-APPM in particular. APhA-APPM is active throughout the year, promoting professional pharmacy practice for a variety of practice settings, establishing programs and activities to serve pharmacists, and providing a means for its members to participate in APhA's policy-making process. I saw masterful planning at the APhA-APPM caucus. Each new business item was considered, and if Academy members were not satisfied with the wording, amendments were drafted by specific individuals with appropriate expertise. Volunteers were selected to endorse recommended action on the floor of the House of Delegates. Even specific microphones were chosen to increase the Academy's voice during the proceedings.

For fairness during the last session, delegations were given different seating assignments from for the first session. (California's fifteen vocal delegates moved from front and center to left and back.) Secret ballots were cast, along with jokes about chads for the Florida delegation, for the Speaker of the House. In a run-off, Tim Tucker of Tennessee was elected. For each new business item, the author addressed the delegates, and comments were heard from state, student, and academy delegates, as well as from APhA officers and representatives from other pharmacy organizations. I had spoken with Victoria Roche, president of AACP, at the Rho Chi booth at the Exhibit Hall, and as a result, she spoke in support of the APhA-AACP partnership for student recruitment.

Will this new business item make any difference? I sincerely hope it will. I believe the Board of Trustees will allocate resources to pharmacy student recruitment initiatives as one action to address the documented shortage of pharmacists to meet the increased demands for pharmaceutical services. I believe APhA, which has just taken over the Glaxo Pathway program that exposes pharmacy students to various pharmacists' roles and careers, will find creative ways to use that program to attract students into the profession. I believe through publications such as *JAPhA, Pharmacy Today*, and *AJPE*, "best practices" in pharmacy student recruitment can be shared and improved. Further, I believe that AACP's implementation of PharmCAS, a centralized application service for colleges and schools of pharmacy, will enable pharmacy to compete for those capable students who are interested in a health profession, but are undecided on the specific profession.

The 2002 APhA convention is in Philadelphia. I sincerely hope that there will actually be competition for MPhA's five delegate slots and that practitioners outside the School of Pharmacy will participate. It is possible that the Maryland delegates could hold caucus meetings, just as the California delegation does. If you are interested in the exhilaration that only a national meeting can offer, I encourage you to talk with other pharmacists and to request leave NOW for March 15-19, 2002.

Cynthia J. Boyle, Pharm.D.
2000-2001 MPhA Speaker
House of Delegates

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Pathways to Health

Mark your Calendars!

MPhA 119th Annual Convention

Saturday, June 9, 2001 -
Tuesday, June 12, 2001

Clarion Resort
Fontainebleau Hotel
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Ocean City, Maryland

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2001 Legislative Report

Bill	Title	Sponsor/Committee	Description	Result w/ammendment
HB 5	Low Income Working Parents Health Care	Hurson, Taylor et al/ Economic Matters and Environmental Matters	Expand eligibility under Medical Assistance to certain low income parents	Unfavorable
HB 6/ SB 236	Senior Prescription Drug Relief Act	Taylor et al/Economic Matters and Environmental Matters	Pharmacy Discount Program for Medicare Recipients within Pharmacy Assistance, Medbank Program (free drug program from Manuf.), Prescription Drug Subsidy program	Passed
HB 30	Income Tax Credit for Prescription Drug Expenses	Stern/Ways and Means	Credit against State Income Taxes equal to 50% or $1000 for Seniors	Unfavorable
SB 126	Pharmacies-Discounts for Beneficiaries	Middleton, Hogan, Hollinger, Neall and Stolzfus/Finance	Requiring pharmacies, as a condition of Medical Assistance participation, charge Medicare beneficiaries no more than the Medicaid price	Withdrawn
SB 181	Maintenance Prescription Supply	Hollinger et al/Finance	Increase the supply of a maintenance drug on a single dispensing from 90 to 100	Unfavorable
HB 6/ SB 236	Senior Prescription Drug Relief Act	Miller, Bromwell and Sfikas/Finance	Pharmacy Discount Program for Medicare Recipients within Pharmacy Assistance, Medbank Program (free drug program from Manuf.), Prescription Drug Subsidy program	Passed
SB 239	Maryland Catastrophic Pharmaceutical Expense Program	Hollinger et al/Finance	For individuals below 250% FPL whose Rx expense exceeds 10% of income to be allowed access to MPAP	Withdrawn
SB 268	Maryland Health Care Foundation-Statewide Access to Free Pharmaceuticals	Sfikas, Hollinger and Bromwell/Finance	To facilitate access to free or subsidized meds from manufacturers through the Maryland Health Care Found. $8 million	Withdrawn
SB 780	Maryland Seniors Prescription Drug Act	Middleton/Finance	Creates within the MPAP a Seniors Prescription Program for low-income seniors	Withdrawn
HB 807/ SB 686	Uniform Prescription Insurance Card	S- Dorman/Finance H-Elliott, Bozman, Sophocleus et al/Economic Matters	Requires insurance card to contain specified data elements	H-Passed S- Passed
SB 772	Therapy Management Agreement	Bromwell/Economic and Environmental Matters	Collaborative Practice Agreements	H-No Action S- Passed
SB 289	Pain Management Program	Hollinger et al/Economic and Environmental Affairs	Establish a State Advisory Council on Pain Management (MPhA is a member)	S-Passed w/amend H- No Action

Bill	Title	Sponsor/Committee	Description	Result w/ammendment
SB 334	Nursing Home Residents-Pharmacy of Choice	Dyson/Economic and Environmental Affairs	Allows resident to use pharmacy of choice. Nursing home must have an alternate for 24/7 for emergency, if in conflict w/ federal law is abrogated	Withdrawn
HB 492/ SB 330	State Advisory Council on Heart Disease and Stroke	S-Kelly/ Economic and Environmental Affairs H- Nathan-Pulliam/Environmental Affairs	State Council on hypertension and related Cardiovascular Affairs (MPhA has been added)	Passed
HB 418	Drugs and Prescription Records-Impounding and Disposing	Chairman, Environmental Matters for DHMH	Allows DHMH to impound drugs and records when permit holder has license revoked or suspended	Passed
HB 587	Maryland Prescription Drug Fair Pricing Act	Pitkin et al/Economic Matters	Expands MPAP to 300% FPL; creates Prescription Drug Fair Pricing Board to set maximum prices by 2003	Unfavorable
HB 687	Short Term Prescription Drug Subsidy Plan	Pendergrass et al/Economic Matters and Environmental Matters	Expands short term program to rest of state	Unfavorable
HB 1092	MPAP-Maryland Cares Prescription Drug Benefit Plan and Md. Catastrophic Prescription Drug	Hammen et al/ Environmental Matters and Economic Matters	Within the Maryland Pharmacy Assistance Program establishes a Cares Program for individuals up to 250% FPL who pay 87% plus $2 ; establishes a catastrophic plan for those have spent $2000/yearly who would pay 24% of Medicaid price plus $2; pharmacy receives no less than Medicaid price	Unfavorable
HB 1232	Senior Citizen Prescription Relief Act	Rudolph et al/Environmental Matters and Economic Matters	Requiring pharmacies, as a condition of Medical Assistance participation to charge Medicare beneficiaries no more than the Medicaid price	Unfavorable
HB 1274	Patients' Safety Act	McHale and Hammen/Rules	Requires Maryland Health Care Commission to develop a system for reducing preventable adverse events	Passed
HB 1307	Pharmacy Errors	Cole and McHale/Rules	Pharmacy must report error to consumer, prescriber, Board of Pharmacy/changed to BOP Task Force Report to House	No Action
HB 1400	Fair Pricing for Prescription Drugs-Maximum Allowable Prices	Conroy et al/Rules	Will establish maximum selling price for manufacturer, wholesaler and retailer	Unfavorable
SB 846	Maryland Pharmacy Discount Drug Program	Sfikas/Rules	Would establish a discount program within Medical Assistance for up to 300% FPL	Withdrawn
HB 1032	Increased User Fees Assessed by MHCC	Guns/Environmental Matters	Increase provider assessment from $8.25 million to $10 million	Passed
HB 1071	Reimbursement Rates Airness Act	Hammen/Environmental Matters	DHMH Annually Set Fee for Service to ensure provider participation	Passed

MPhA Foundation Auction

Come join the fun—a real, live auction. There will be many wonderful items. The excitement and bidding will take place at the Annual Banquet Reception, Monday, June 11.

Some of the Auction Items . . .

- Orioles Skybox
- Sports Memorabilia
- Weekend Getaway
- Books
- Autographed Baseball

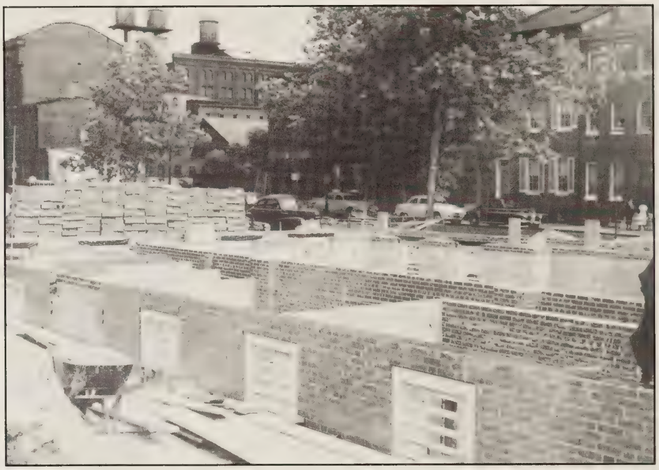
The Auction will benefit the MPhA Foundation

Where: 119th Annual Convention, Ocean City, Maryland
During: The Banquet Reception
Time: 7 p.m.
When: Monday, June 11, 2001

MPhA Foundation

Looking Back
1953

Check out those trucks!



A great start!

Almost there!

Pathways to Health

Maryland Pharmacists Association
119th Annual Convention
Saturday, June 9 - Tuesday, June 12, 2001
The Clarion Resort Fontainebleau Hotel, Ocean City, Maryland

Join Us

We hope you will enjoy the many educational, professional and social events planned for this year's convention. Come to Oceanfront luxury and enjoy the fun and excitement that comes with the sunrise, sunset, and the ocean breezes.

Continuing Education

The continuing education programs offered at this year's convention are the latest in both traditional and non-traditional therapies—from herbal care to anticytokine therapy, and nutrition to atherosclerosis. Learn about the hottest topics in pharmacy and earn up to 20 contact hours of continuing education.

Trade Show & Job Fair

Connect to your future. Visit the exhibits on Monday, June 11. *During lunch*, you will find displays of the latest innovative products and services. You may also find if the grass is greener on the other side. Meet with prospective employers in a casual, nonintimidating setting (with no business suits or appointments). *No one under 16 years of age will be allowed on the exhibit floor.*

Social Events

Enjoy the laid-back atmosphere of the beach and come to the President's BBQ Cookout, Crab Feast, and Award Reception and Banquet. Enjoy the best that Maryland has to offer—all in Ocean City. Have fun and relax with friends and family. There will be lots of great food!

What to Wear

Casual attire is appropriate for all education sessions and for the evening social activities. *The Awards Reception and Banquet is business attire.*

Raffle

Better than the Maryland Lottery—betting on the horses at Pimilico—the slots at Dover Downs—the tables at Atlantic City, the MPhA Raffle is your best chance to win two Airline tickets to anywhere in the contiguous United States and support the Association at the same time. You do not need to be present to win. Proceeds will benefit the MPhA Foundation.

Auction

Come join the fun—a real, live auction featuring our own Jerry Herpel, as auctioneer. There will be many wonderful items. The excitement and bidding will take place at the Annual Reception on *Monday, June 11*. Proceeds will benefit the MPhA Foundation.

Advance Registration

Please complete the registration form included in this brochure. Type or print clearly and return the form with your check or credit card information to: **MPhA Annual Convention 650 W. Lombard Street, Baltimore, MD 21201-1572.** If you are paying with a credit card, you may FAX your registration to MPhA at 410-727-2253. Register before the deadline and save the $40 on-site fee. ***The deadline for Advance Registration is Friday, May 25, 2001.***

On-site Registration

Registration forms received after the advance registration deadline will not be processed. You will need to register when you arrive at the Sheraton and add the $40 on-site fee.

Registration Fees

Review the registration categories below to determine what is included in your fee. ***Full pharmacist registration*** fee includes all breakfasts, admission to all CE sessions, beverage breaks, lunches and all evening events. ***Full spouse/guest registration*** fee includes all breakfasts and all evening events. *(Fee does not include lunches or the Trade Show & Job Fair.)* ***Child registration*** fee includes all breakfasts and the President's BBQ Cookout on Saturday evening. *(Fee does not include lunches, the Trade Show & Job Fair, Crab Feast or Awards Reception/Banquet.)* ***Student registration*** fee includes all breakfasts, admission to all CE sessions, beverage breaks and lunches. *(Fee does not include the President's BBQ Cookout, the Crab Feast or Awards Reception/Banquet.)* ***Daily registration*** fee includes breakfast, admission to all CE sessions, beverage breaks, and lunch if served for that day. If you have any questions about the program and/or registration, please contact the Maryland Pharmacists Association at 410-727-0746, or toll-free in Maryland 1-800-833-7587.

Registration	Breakfast	CE Sessions	Beverage Breaks	Lunch	President's BBQ Cookout	Crab Feast	Reception & Banquet
Pharmacist	X	X	X	X	X	X	X
Spouse/Guest	X				X	X	X
Child	X				X		
Student	X	X	X	X			
Daily	X	X	X	X			

Registration Cancellation

To cancel your registration and receive a refund, a written request must be received by Friday, May 25, 2001. Cancellation requests received by this date will be processed and a refund issued less a $25 processing fee. Please allow 4-6 weeks for processing. All requests received after Friday, May 25, 2001, will mandate a 100% forfeiture of monies paid.

Hotel Accommodations

The Clarion Resort Fontainebleau is offering discounted hotel rates for MPhA attendees. To reserve your room, call the Sheraton directly at 1-800-638-2100. You must tell the reservation agent you are with the Maryland Pharmacists Association to receive the special rate. A deposit equal to one night's stay is required to hold the reservation. Currently an 8% state and local tax is applicable to the room rates. ***The deadline is Wednesday, May 9, 2001.***

Hotel Cancellation

Reservation cancellations must be made 72 hours prior to scheduled arrival to avoid a full room rate "No Show" charge. If you cancel, you must have a cancellation number to receive a refund. If you plan to shorten your length of stay, you must notify the hotel at or before check-in to avoid an early check-out fee of $149.

Room Rates

Double/Double	$149	Condos	
Executive King	$169	1 Bedroom	$179
Studio King	$179	2 Bedroom	$249
Cabana	$289	3 Bedroom	$315

Special Needs

If you require special accommodations or meals to participate in this educational program, please provide written information about your requirements to the Maryland Pharmacists Association at least ten (10) business days in advance of the meeting.

Schedule at a Glance

Saturday, June 9

12:00 - 5:00	Registration
1:00 - 1:55	"Gestational Diabetes" ACPE# 144-999-01-026-L01* *Presenter: Beverly Yachmetz, Pharm.D., CDE*
2:00 - 2:55	"Pain Management for Pharmacies: Evaluating Clinical Outcomes of Pain Therapy" ACPE# 144-999-01-027-L01* *Presenter: Thomas Carroll, MS, Pharm.D.* *Sponsor: Purdue Frederick*
3:00 - 3:15	Beverage Break
3:15 - 4:15	"Peripheral Arterial Disease: The Unrecognized Manifestation of Atherosclerosis" ACPE# 144-999-00-079-L04* *Presenter: Gail Rosen Spahn, Pharm.D.* *Sponsor: Sanofi-Synthelabo*
4:15 - 5:15	"Lyme Disease" ACPE# 144-999-01-028-L04* *Presenter: Karen Plaisance, Pharm.D.*
6:30 - 9:00	**President's BBQ Cookout**

Sunday, June 10

7:00 - 5:00	Registration
7:00 - 9:00	Buffet Breakfast
8:00 - 9:45	"Lipid Management: Improving Patient Outcomes and Successful Program Implementation" ACPE# 829-000-01-004-L01-403 *Presenter: Mark Cziraky, Pharm.D.* *Sponsor: Pfizer*
9:45 - 10:00	Beverage Break
10:00 - 11:55	"Advances in the Treatment of Rheumatoid Arthritis: A Focus on Anticytokine Therapy" ACPE# 073-000-99-078-L01 *Presenter: Leslie Gofney, Pharm.D.* *Sponsor: Wyeth-Ayerst/Immunex*
12:00 - 1:30	Lunch - House of Delegates *Sponsor: Purdue Frederick*
1:30 - 2:30	"Evolution of Direct to Cousumer Advertising" ACPE# 144-999-01-071-L04* *Speaker: Frank Palumbo, Ph.D., J.D.*
2:30 - 3:25	"Systemic Enzymes" ACPE# 144-999-01-030-L04* *Presenter: Aftab Ahmed, Ph.D.* *Sponsor: Naturally Vitamins*
3:30 - 3:45	Beverage Break
3:45 - 4:45	"Homeopathy: Medicines for a New Century" ACPE# 144-999-01-031-L04* *Presenter: Doug Campbell, R.Ph.*
6:30 - 9:00	**Crab Feast**

Monday, June 11

7:00 - 5:00	Registration
7:00 - 9:00	Buffet Breakfast
7:00 - 9:00	Trustee Breakfast - Meeting *Sponsor: Pharmacia & Upjohn*
8:00 - 8:55	"Pediatric Poisoning" ACPE# 144-999-01-032-L04* *Presenter: Lisa Booze, Pharm.D., CSPI*
9:00 - 9:55	"Prebiotics" ACPE# 144-999-01-033-L04* *Presenter: Aftab Ahmed, Ph.D* *Sponsor: Naturally Vitamins*

10:00 - 11:55	"Effective Herbal Health Care, Diabetes: From Anecdote to Evidence" ACPE# 144-999-01-034-L01* *Presenter: Philip Duterme, Ph.D.* *Sponsor: Himalaya ProSelect*
10:45 - 11:00	Beverage Break
12:00 - 2:00	Lunch - **Trade Show & Job Fair**
2:00 - 2:55	"Herbal Remedies in Today's Pharmacy World—USP's Role in Monograph Formations" ACPE# 144-999-01-035-L04* *Presenter: Matthew Shimoda, Pharm.D., FASCP* *Sponsor: Phyto Pharmica*
3:00 - 3:15	Beverage Break
3:15 - 5:00	House of Delegates
7:00 - 10:30	**Auction & Banquet**

Tuesday, June 12

7:00 - 12:30	Registration
7:00 - 9:00	Buffet Breakfast
8:00 - 8:55	"Epidemiology" ACPE# 144-999-01-036-L04* *Presenter: David Blythe, M.D.*
9:00 - 9:55	"Serving Your Asthma and Allergy Customers' Needs Beyond the Meds" ACPE# 370-000-01-009-L04 *Sponsor: McKessonHBOC*
10:00 - 10:15	Beverage Break
10:15 -12:00	"Implementing Disease Prevention Programs in Your Pharmacy" ACPE# 144-999-01-040-L01* *Presenters: Tori Tomlinson, MBA and Jann Skelton, R.Ph., MBA* *Sponsor: Medica, LLC*

Raffle

Two Round-Trip Tickets to
Anywhere in the United States
(excludes Alaska and Hawaii)
Tickets are $5 each, or 5 for $20
Drawing is Monday, June 11, 2001.
You do not have to be present to win.

Auction Items

Orioles Skybox from Nutramax Labs
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Interactions...

Community Pharmacy and the School of Pharmacy

Community pharmacy is the bedrock of the profession. Every one of us walks into a community pharmacy at least once a week. The pharmacist is the most accessible, trusted and competent health professional. This is no accident. Community pharmacists work long and hard, often under very stressful conditions, to make sure that people can obtain drugs and pharmacy services close to home.

Preparation for a career in community pharmacy starts with today's pharmacists recruiting the pharmacists of tomorrow. Today's community pharmacists know what it takes to be successful: what is the proper combination of brains, personality, initiative, compassion, and business sense to succeed. Without a doubt, community pharmacy requires a combination of ingredients unlike that of any other health professional.

The pharmacy students, the raw material, find a curriculum at the University of Maryland that provides a solid base of pharmaceutical sciences and therapeutic knowledge. This baseline knowledge is a start but not enough. It is followed by a rigorous 1600 hours of experiential learning directed by practicing pharmacists in a wide variety of settings under the organizing direction of our faculty and staff. Over 20% of the program is elective, so students themselves can shape their future by selecting from among both course work and rotations that add the focus which will further prepare them for their niche in the profession.

Finally, their academic studies are complemented by the opportunity to participate in a wide array of student organizations, lecture series and discussion groups, driven by students, faculty and practitioners with an interest in different aspects of pharmacy practice.

What do we do to nurture careers in community pharmacy practice? We provide content, information, resources and opportunity. Community and ambulatory practice makes up a very large part of our curriculum because most patients that pharmacists see receive their care in community practice settings. Our practice faculty continues to grow in breadth and interest. This year alone we have appointed new professors in ambulatory care and in pediatric pharmacy. We are close to making an appointment in community pharmacy practice in a position that has been formed by a creative partnership with a Baltimore community pharmacy. By next fall we will have three community pharmacy residencies. These post-Pharm.D. training programs are the source of the faculty and leaders of tomorrow in community pharmacy practice.

Among our elective courses is a sequence in marketing and management including practice management, organizational behavior and business plan development. We have launched a joint Pharm.D./MBA program in collaboration with the Merrick School of Business at the University of Baltimore.

Community pharmacists can frequently be found in Pharmacy Hall lecturing to students, providing career day information, and participating in student organizations such as the Student Chapter of the National Community Pharmacists Association. All major national organizations have student groups in the school. Faculty are accommodating to students who wish to attend regional and national meetings of professional organizations.

Our faculty practice what they preach. Dr. Magaly Rodriquez de Bittner has been a national pioneer in helping to establish community pharmacy based diabetes education and treatment programs in Giant pharmacies in the region. Our faculty are active participants and leaders in national and state pharmacy practice organizations. For example, Cynthia Boyle serves as speaker of the MPhA House of Delegates, and Fred Abramson serves on the MPhA Board of Trustees. I am a permanent ex officio member of that Board. Faculty have been active advocates on behalf of community pharmacy in the General Assembly and our students turned out in large numbers in support of Pharmacy Legislative Day in Annapolis in February.

This spring we are putting the finishing touches on the most visible symbol of the School's commitment to community pharmacy practice: the new and improved Pharmacy Practice Laboratory. This facility is a practicing pharmacy for the exclusive use of our students prior to going out on rotations in actual practice. The Lab emulates the layout and technology support of a modern community pharmacy, including automated dispensing equipment, information technology, counseling and patient education areas, and complete videotaping capabilities for teaching purposes. The Lab was designed with input from practitioners and was almost totally funded by private donations. It is our intention to use this laboratory not only for the education of the Pharm.D. students but also as a training ground for technicians from other local colleges and organizations. This will enable us to educate pharmacists and technicians side-by-side in a real world setting and permit us to improve the ability of our graduates to best use supportive personnel. The Lab also offers marvelous opportunities as a site for continuing education of practitioners.

More of our graduates go into community pharmacy practice than into any other area of the profession. Preparing our students for a successful career in this area of the profession is a top priority. To accomplish this goal we work in close collaboration with alumni, other practitioners, professional organizations and employers who share our values and goal of educating the very best practitioners for the community pharmacy of the future.

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By Kenneth R. Baker, B.S.Pharm., J.D.

This series, **Pharmacy and the Law**, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc. a company dedicated to providing quality products and services to the pharmacy community.

FEDERAL COMPOUNDING STATUE DECLARED UNCONSTITUTIONAL AND VOID: A RETURN TO THE BAD OLD DAYS?

In 1997 the United States enacted the FDA Modernization Act. The full statute went into effect one year later. The Act was codified as § 353a of the Food, Drug, and Cosmetic Act [FDCA]. The law provided that certain portions of the FDCA as it related to new drug applications, labeling and inspections would not be applied to pharmacy compounding, if:

> *... the drug product is compounded for an identified individual patient based on the unsolicited receipt of a valid prescription order or a notation, approved by the prescribing practitioner, on the prescription order that a compounded product is necessary for the identified patient, if the drug product meets the requirements of this section ....* 21 USC §353a

Prior to the Act, it could be argued that by a strict reading of the federal drug laws, a pharmacist could have been required to submit a new drug application to the FDA prior to compounding any prescription. The pharmacist would then have to wait from six months to several years for approval. By the time approval would arrive, of course, it is unlikely the patient would any longer care.

The FDA contended that it had the right to enforce federal law on compounding pharmacies. It did not, it said, only because it decided to exercise its "enforcement discretion". Thus the FDA permitted most pharmacists to compound drugs without meeting the stringent standards of the FDCA.[1] According to the FDA, it could regulate compounding any time it decided. There were no rules. The FDA Modernization Act of 1997 established rules. It placed restrictions on pharmacy compounding, but also protected pharmacists who compounded from FDA "enforcement discretion".

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[1] See discussion in Western States Medical Center v. Shalala, 69 F.Supp.2d 1288, 1292 (Dist NV 1999), Rev., --- F.3d ---- (9th Ct. App.), 2000 WL 33153172, 2001. Also See FDA Guidelines 1992.

After § 353a went into effect, many compounding pharmacies voiced objections to some of the restrictions in the Act. Several of these joined together and brought a lawsuit in federal court to enjoin the FDA from enforcing the objectionable sections. Specifically these pharmacists objected to §§ 353a(a), (b)(3) and (c)[2]. Two of these subsections mandated that compounding pharmacists could not promote or advertise particular compounded drugs. The pharmacists argued these subsections, (a) and (c), violated the First Amendment's guarantee of free speech. On this commercial free speech issue, the Federal District Court, sitting in Nevada, handed the pharmacists a victory in 1999. Importantly, the District Court, while holding that the advertising restrictions must be stricken from the law, it concluded that the remainder of the Act was valid. The Court said:

> *Therefore, the court finds that the speech-related portions of the § 353a are severable, leaving the remainder of the statute to operate as it was enacted. .... For the foregoing reasons, the court ... enjoins the FDA from enforcing the speech-related restrictions contained in §§ 353a(a) and (c).*

The Government appealed to the 9th Circuit Court of Appeals. The Court of Appeals delivered its opinion on February 6, 2001. The Court of Appeals agreed with the District Court that §§ 353a(a) and (c) violated the First Amendment, but the Court of Appeals went further. It held the entire law void. The Court said:

> *Thus, we hold that § 353a[a] and § 353a[c]'s restrictions on commercial speech violate the First Amendment {free speech}. These provisions may not be severed from the rest of the provisions in § 353a. Accordingly, § 353a is invalid in its entirety.* {Emphasis added}[3].

If you believe this is good news for the compounding pharmacist, you may be mistaken. The "old days" were not good. Pharmacists are now left without the protection of § 353a. We may now return to the "old days" when the pharmacist was caught between federal bureaucrats who held that federal law gave them the right to close compounding pharmacies "any time they chose" and state boards of pharmacy who felt that the states controlled the practice of pharmacy, including compounding.

---

[2] § 353a. Pharmacy compounding
(a) In general
Sections 351(a)(2)(B), 352(f)(1), and 355 of this title shall not apply to a drug product if the drug product is compounded for an identified individual patient based on the unsolicited receipt of a valid prescription order or a notation, approved by the prescribing practitioner, on the prescription order that a compounded product is necessary for the identified patient, if the drug product meets the requirements of this section, and if the compounding—

....

(c) Advertising and promotion
A drug may be compounded under subsection (a) of this section only if the pharmacy, licensed pharmacist, or licensed physician does not advertise or promote the compounding of any particular drug, class of drug, or type of drug. The pharmacy, licensed pharmacist, or licensed physician may advertise and promote the compounding service provided by the licensed pharmacist or licensed physician.
§(b)(3) dealt with the percentage (5% to 20%) of the compounding pharmacies business could be compounding.

[3] Western States Medical Center v. Shalala, --- F.3d ----, 2000 WL 33153172, 2001 Daily Journal D.A.R. 1391 (9th Cir.(Nev.) Feb 06, 2001) (NO. 99-17424).

After the demise of § 353a, does the FDCA apply to compounded prescriptions? Is a new drug application required under § 355? By what authority are compounded prescriptions exempt from §§ 351(a)(2)(B), 352(f)(1), and 355? Is pharmacy back to relying upon the FDA's exercise of its "enforcement discretion"?

The FDA Modernization Act § 353 was passed after much time and work because it was necessary to clarify the law under which pharmacists could compound. Unless the Court of Appeals reconsiders or the Supreme Court reverses the non-severable part of the decision, a new § 353a must be drafted and passed. Pharmacists need rules to protect them from potentially arbitrary "enforcement discretion".

© Kenneth R. Baker is Vice President, General Counsel at Pharmacists Mutual Insurance Companies.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with the policies and procedures of their employers and insurance companies, and act accordingly.

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Continuing Education for Pharmacists

Volume XVIII, No. 2

Patient Counseling: Plant Ingestions and Poisoning; Part 1: Introduction

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals. The goals of this lesson are to describe the incidence and circumstance of toxic plant ingestions and potential poisoning, list symptoms of toxicity, and discuss treatment options where appropriate.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. identify plants that are purported to cause toxic symptoms when ingested;
2. select from a list components of plants that cause toxicity and describe their site, mechanism, and symptoms of poisoning;
3. choose from a list appropriate steps in the management of plant-induced poisoning; and,
4. demonstrate an understanding of advice to convey to patients who request information on potential plant toxicity.

A professional development program made possible by an educational grant from

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More than 15,000 Americans are reportedly poisoned by plant ingestions each year. Since that number may not seem excessively large, it may be misleading, suggesting that ingestion of poisonous plants is not important. The reality is that up to 10 percent of calls into Poison Control Centers in the U.S. concern plant ingestions, and this incidence is also reported to be increasing. These figures do not include the hundreds of thousands of individuals who suffer allergic reactions from contact with poisonous plants such as poison ivy and poison oak.

This is the first of a two-part series. General information, plus specific points relevant to a variety of plants, are discussed.

Extent of the Problem

As Americans forage through the countryside in search of alternate food sources, poisonous plants are too frequently mistaken for edible ones. With keen awareness for self-care and self-medication, many persons are exploring the use of herbs and natural products. Additionally, many products of plant origin are available for sale OTC, and are potentially toxic if misused. Children may believe that the bright berries of many plants are edible and consume them. Unfortunately, some adults and adolescents experiment with plants that they believe have hallucinogenic properties, only to suffer toxic outcomes.

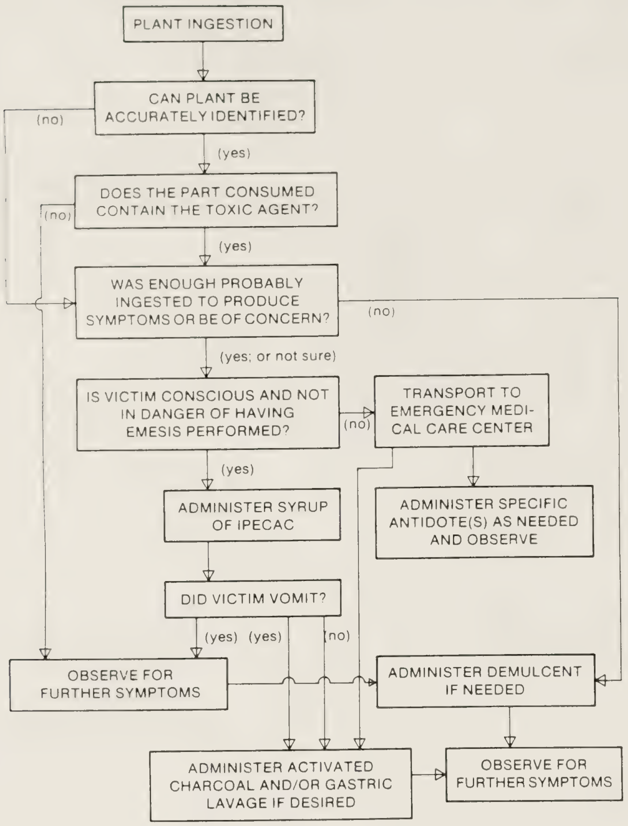
It is not always necessary to ingest a plant to induce toxicity. Drinking the water from a vase containing plant stems or seeds may be sufficient to cause serious toxicity. Additionally, plants which are otherwise considered to be harmless may have been treated with toxic insecticides, herbicides, or fertilizers. In this case, presenting symptoms and outcomes may be characteristic of the chemical additive, not of the plant.

Although plant ingestions are commonplace, they rarely cause serious toxicity. Most victims of plant ingestion realize little more than localized irritation, such as mouth or stomach pain. Some plants, however, can cause serious toxicity and ingestion of plant material of unknown identity should be treated as a potential toxicity until it can be classified otherwise.

Of the approximately 30,000 species of plants growing in North America, fewer than 1000 are toxic, and fewer than 50 species cause over 95 percent of all poisonings.

It is sometimes difficult to define precisely what constitutes a poisonous plant. Many plants can cause nausea, vomiting, or intestinal cramping that can be severe if a sufficient amount is ingested. It can be argued that the above symptoms do not constitute poisoning, but rather a localized activity and

Figure 1


PLANT INGESTION
CAN PLANT BE ACCURATELY IDENTIFIED?
(no)
(yes)
DOES THE PART CONSUMED CONTAIN THE TOXIC AGENT?
(no)
(yes)
WAS ENOUGH PROBABLY INGESTED TO PRODUCE SYMPTOMS OR BE OF CONCERN?
(no)
(yes; or not sure)
IS VICTIM CONSCIOUS AND NOT IN DANGER OF HAVING EMESIS PERFORMED?
(no)
TRANSPORT TO EMERGENCY MEDICAL CARE CENTER
(yes)
ADMINISTER SYRUP OF IPECAC
ADMINISTER SPECIFIC ANTIDOTE(S) AS NEEDED AND OBSERVE
DID VICTIM VOMIT?
(yes) (yes)
(no)
OBSERVE FOR FURTHER SYMPTOMS
ADMINISTER DEMULCENT IF NEEDED
ADMINISTER ACTIVATED CHARCOAL AND/OR GASTRIC LAVAGE IF DESIRED
OBSERVE FOR FURTHER SYMPTOMS

Flow chart illustrating decision points and direction in determining the management of patients following ingestion of a potentially toxic plant. From Gossel TA and Bricker JD: *Principles of Clinical Toxicology* 3rd ed. New York, Raven Press; 1994

removal of the plant by emesis, thus preventing systemic toxicity.

Others argue that poisonous plant species are defined as those that cause biochemical alterations or physiological symptoms when small quantities are ingested. Thus, jimsonweed and foxglove are classed as poisonous because very small quantities can produce significant toxic effects, even death.

Not all parts of some poisonous plants are toxic. Moreover, the toxic principles may be present only during certain seasons or stages of plant growth. Even slightly altering the method used to prepare plants for intentional consumption may influence their safety or toxicity.

Treatment of Plant Poisonings

There are important guidelines which direct the steps that should be followed when poisoning by a potentially toxic plant is suspected. See Figure 1. All plant ingestions must be considered potentially toxic until shown otherwise.

Identification of the Plant. Accurate identification is often the most difficult task. The parent of a child who has ingested a plant part may be unaware of its identity, what part of the plant was ingested, or where the child found it. One person's name for a plant may or may not confer an accurate description to another. Plant nicknames are common; often the correct botanical name is unknown. Also, different names may be applied to the same plant, depending on the region of the country or culture of the population. The name *elephant's ear,* for example, may refer to *Caladium, Colocasia, or Dieffenbachia* species; to mandrake; or to several other plants.

Delay in onset of toxic symptoms is common and may be advantageous. The toxic principles of most plants must first be leached out of the leaf, stem, seed, or other structure. The plant part may need to be chewed or damaged before its toxic component can be released. Many plant parts will pass through the body undamaged, thus failing to release toxic principles. Therefore, there is usually sufficient time to identify the plant correctly.

If a poisoning is suspected, a Poison Control Center should be contacted first. If the Poison Control Center cannot identify the plant, it may refer the caller to a center that specializes in phytotoxicology. Nurserymen may be knowledgeable of botanical plant names and common names when a specific plant is described to them. Wild plants are best identified by a botanist or local agricultural extension agency. A mycologist may need to be contacted for identification of mushrooms species. Table 1 summarizes useful points in identification of potentially poisonous plants.

Treatment. Once the plant is identified and the decision made to remove it from the GI tract, early gastric decontamination should be considered. All regurgitated material should be examined thoroughly to characterize the nature of the plant parts that were ingested.

Demulcent therapy is usually sufficient for most plant ingestions. Many plants contain constituents that are extremely irritating to oral mucous membranes, but not damaging to other tissues. Cold milk, ice cream, or a frozen confection will

Table 1
Aids to Help Identify a Potentially Poisonous Plant

- Specific site where the plant was growing, including whether the area is sunny or shady, and the soil is moist or dry
- Is this a house plant, cultivated variety, or wild-growing weed
- Shape and texture of leaves, including description of edges and arrangement on stalk, and vein structure
- Color, size, texture, and shape of seeds, fruits, berries or flowers, including their arrangement and grouping
- Plant's dimensions, both above and below the soil
- Nature of the plant (i.e., free-standing or growing on another plant)
- Common and botanical name of the plant

soothe most irritations of the oral cavity following exposure. Sucking on ice chips may also be helpful. Victims should be observed closely over the next 12 to 24 hours to assure that no additional symptoms appear as a result of delayed absorption or delayed toxic effects.

Some plants produce a powerful emetic action of their own which may cause spontaneous vomiting. After vomiting, if the victim displays additional symptoms or specific signs that suggest toxicity, medical intervention will be necessary.

Syrup of ipecac is the gastrointestinal decontaminant (Table 2) of first choice for plant ingestions. It is preferred over activated charcoal. Adsorption of toxic principles onto activated charcoal is dependent on their presence in fine powder form or in solution. A leaf, berry, seed or other plant part that contains toxic principles probably will not release them until the part is sufficiently digested. If possible, it is better to remove the entire plant part. Activated charcoal may be given as a slurry following emesis or gastric lavage to adsorb residual poison.

Gastric lavage has limited value for decontamination of the stomach following a plant ingestion since most undigested plant parts will not fit through the opening of even the largest orogastric tube. Saline cathartics may also be recommended to hasten removal of ingested plants, following emesis and administration of activated charcoal.

Common Poisonous Plants

Most poisonings occur from a relatively small number of species of cultivated and wild plant varieties. The following descriptions summarize common ones.

Arum Family. Of common houseplants, those of the Arum family are responsible for most exposures or ingestions. Plants of the Arum family include caladium *(Caladium bicolor)*, dumbcane *(Dieffenbachia picta* and *D. sequine)*, elephant's ear *(Colocasia antiquorum)*, and philodendron (*Philodendron* species).

Arum-family plants are characterized by large leaves that contain numerous, tiny needle-sharp crystals of calcium oxalate. These crystals are arranged in parallel compact bundles called raphides, or starlike clusters called druses. Biting into a leaf may cause intense pain as these crystals pierce the sensitive membranes of the mouth and lips. A second bite is, therefore, often avoided and significant systemic toxicity is rare.

Ingestion of plants of the Arum family results in localized edema, pain, and irritation. Occasionally, the tongue swells so that swallowing and speaking become difficult. If swelling of the tongue, pharynx, or larynx becomes sufficiently severe to interfere with breathing or induce choking, emergency medical treatment will be necessary. Dermal exposure may result in localized dermatitis, particularly when the skin comes in contact with the sap contained within the plants.

Management of ingestions of Arum-family plants is supportive and symptomatic. Demulcents and cold packs to the mouth, if needed, may be helpful.

Christmas Plants. Houseplants commonly encountered around the Christmas holidays that are reported to cause toxicity, especially in children, include the poinsettia, holly, mistletoe, and Jerusalem Cherry.

There is a common misconception that the poinsettia plant *(Euphorbia pulcherrima)* is toxic. Poinsettia plants are nontoxic. However, the milky sap from broken leaves or stems, when bitten or broken, may cause mild irritation of mucous membranes resulting in oral discomfort. A demulcent may be used to reduce mouth pain. If any of the sap touches the skin, it should be washed off with soap and water.

White mistletoe *(Phoradendron flavescens)* berries or the bright red berries of Christmas holly *(Ilex opaca)* are potentially toxic. Rarely does systemic toxicity occur, since both berries induce severe gastrointestinal irritation resulting in emesis.

The primary manifestations of mistletoe toxicity are gastrointestinal, including abdominal pain, nausea, vomiting, and diarrhea. Ingestion of one to three berries, or one or two leaves, is unlikely to produce serious toxicity. With greater quantities, induction of emesis with ipecac is recommended, followed by a slurry of activated charcoal and a saline cathartic.

Holly contains saponins and

Table 2
Ipecac Syrup and Activated Charcoal for Gastric Decontamination

Ipecac Syrup

Age	*Quantity*
6-12 months	5-10 mL
1-12 years	15 mL
adults	30 mL

Activated Charcoal

Age	*Quantity**
under 12 years	25-50 g
adults	100 g

*A relative dose ratio of at least 10:1 charcoal to drug is often recommended. From Gossel TA and Wuest JR: *Ohio Pharmacist* 1997; 46(2):7-10.

triterpenes. These may induce intense gastrointestinal symptoms, including bloody vomitus.

The bright orange cherry-like ornamental berries of Jerusalem Cherry *(Solanum pseudocapsicum)* contain solanine. This extremely toxic glycoalkaloid is also found in the nightshade plants. Ingestions of these plants should be treated aggressively.

Solanine is hydrolyzed by gastric acid into alkamine, which is toxic to the cardiovascular and central nervous systems. Ingestion causes circulatory collapse and respiratory distress. Fever, drowsiness, restlessness and headache are also reported.

GI tract decontamination is warranted. Ipecac-induced emesis should be followed with lavage, activated charcoal, and cathartics.

Cardiotoxic Plants. Numerous plants cultivated in gardens and displayed as houseplants contain toxic substances that produce actions on the heart characteristic of digitalis. These include foxglove *(Digitalis purpurea)*, oleander *(Nerium oleander)*, lily-of-the-valley *(Convallaria majalis)* and star-of Bethlehem *(Ornithogalum umbellatum)*.

Foxglove and oleander toxicities resemble digitalis poisoning with gastrointestinal and cardiac symptoms predominating. Intoxication is a medical emergency requiring close monitoring of the electrocardiogram, along with serum potassium levels since hyperkalemia may be present.

Ingestion of even small quantities of these plants must be treated aggressively. Gastric decontamination with syrup of ipecac followed by serial doses of activated charcoal and supportive care is required.

Ingestion of lily-of-the-valley plant parts is less serious. Only small amounts of the poisonous convallatoxins are present. Larger ingestions need to be treated following the previously stated guidelines.

Yew *(Taxus canadensis, T. baccata)* is a common ornamental evergreen shrub that grows in most midwest and northeast areas of the U.S. Yew is of toxicologic concern. It contains the potent cardiotoxic toxins taxine A and taxine B. The tiny red berries that adorn the stems are especially attractive to children.

All portions of the yew plant, except the bright red fleshy part that caps the seeds, contain taxine alkaloids. When chewed, a single berry (containing the seed which harbors concentrated toxin) is potentially lethal to a child.

Ingestion of yew seeds may produce severe gastrointestinal distress. The major concern is progressively decreasing atrioventricular (AV) nodal conduction which may lead to severe bradycardia.

Treatment is aimed at gastric decontamination, correction of electrolyte imbalance, and maintenance of cardiac function.

Several other plants including rhododendron, azaleas, and laurel contain toxins. Termed grayanotoxins, these substances are of special concern since they resemble cardiac glycosides and veratrum alkaloids structurally. Intoxication is more likely to result in bradycardia and hypotension, rather than arrhythmias. Human toxicities have been reported following ingestion of honey made from the nectar of grayanotoxin-containing plants.

Castor Bean. One of the most toxic of all the cultivated plants that grow in the U.S. is the castor plant *(Ricinus communis)*. The plant is grown in many parts of the country as an ornamental shrub. It is also harvested for its oil. Castor beans (seeds) are quite attractive to children, and ingestion with chewing of a single seed may be fatal. Unchewed seeds will probably pass through the GI tract without causing clinical problems.

Castor beans contain the phytotoxin ricin. Consisting of two polypeptide chains, one binds to intestinal cells and the other is an inhibitor of protein synthesis. Ricin is ordinarily inactivated by heat during production of castor oil. The primary target sites for inhibition of protein synthesis include the cells of liver, pancreas, and kidney.

Symptoms of poisoning include intense GI irritation with burning in the mouth and throat. Dyspnea, muscle weakness and general malaise, reduced reflexes, and convulsions are also reported. Blood pressure remains normal until two to three hours before death.

Onset of symptoms, other than localized irritation, may be delayed for 12 to 18 hours or more. Consequently, close observation of the victim throughout this period is required. Death is usually caused by cardiovascular collapse and decreased respiratory functions.

Ingestion of castor beans or any part of the castor plant must be treated as a potential emergency, even if the part has not been chewed or broken. Spontaneous vomiting may remove most of the plant parts from the GI tract, but this alone cannot be relied on for decontamination. Activated charcoal and cathartics should follow emesis, and the victim must be observed for at least 24 hours. Symptoms appearing during this period should be treated appropriately (e.g., convulsions with diazepam). Urinary alkalinization with sodium bicarbonate may aid in further elimination of absorbed ricin.

Summary

Part 2 of this series continues the discussion, and provides additional information for counseling patients.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Plant Ingestions and Poisonings; Part 1: Introduction." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 2/15/03. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-00-002-H01.

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The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. All of the following statements are true EXCEPT:
   a. for a poisonous plant to induce toxicity, it is always necessary to ingest the plant.
   b. although plant ingestion is commonplace, it rarely causes serious toxicity.
   c. of the approximately 30,000 species of plants growing in North America, fewer than 50 species cause over 95 percent of all poisonings.

2. When wild mushrooms have been ingested, the best professional to contact for identification would be a:
   a. botanist.
   b. mycologist.
   c. bacteriologist.
   d. nurseryman.

3. Which of the following is the LEAST appropriate substance to use for soothing irritation of the oral cavity caused by chewing a plant?
   a. Cold milk
   b. Ipecac syrup
   c. Frozen confections
   d. Ice cream

4. Which of the following treatments should be used first when treating an ingestion of a poisonous plant?
   a. Activated charcoal
   b. Burnt toast
   c. Ipecac syrup
   d. Saline cathartics

5. Which of the following house plants is NOT a member of the Arum family?
   a. Dumbcane
   b. Elephant's ear
   c. Philodendron
   d. Jerusalem cherry

6. The needle-sharp crystals present in the leaves of plants of the Arum family contain which of the following chemicals?
   a. Calcium oxalate
   b. Ferrous sulfate
   c. Potassium permanganate
   d. Sodium chloride

7. Which of the following parts of the poinsettia plant causes irritation to tissues in the mouth?
   a. Whole leaves
   b. Broken stems
   c. Roots
   d. Berries

8. The recommended dose of ipecac syrup for gastric decontamination in a child from ages one to 12 years is:
   a. 1 ml.
   b. 5 ml.
   c. 15 ml.
   d. 30 ml.

9. The ornamental evergreen shrub that contains a potent cardiotoxic substance (taxine) which is potentially lethal to a child is:
   a. lily-of-the-valley.
   b. foxglove.
   c. oleander.
   d. yew.

10. The phytotoxic substance contained in castor beans has been shown to inhibit protein synthesis in all of the following organs EXCEPT the:
   a. heart.
   b. kidney.
   c. liver.
   d. pancreas.

Pharm/alert® Notes

Counseling Notes for Pharmacists

Plants to Avoid: Poison Ivy, Oak, Sumac

Nearly 65% of us are sensitive to poison ivy, oak and sumac plants, which bloom throughout most of North America (except Nevada, Alaska and Hawaii). The term "poison ivy" is sometimes used as an umbrella term to indicate all three plants, all of which derive from the Rhus family and contain the same irritant, allergenic substance: urushiol.

One of the most potent toxins on earth, this yellowish oily chemical is present in the sap of the leaves, flowers, fruit, stem, bark and roots of the plant. Urushiol is so tenacious that it remains active on clothes, tools or fur for months or even years. It adheres to protein molecules on the skin within 10-20 minutes of exposure—once this union has occurred in a sensitive individual, a rash is inevitable. It begins with itchiness and swelling, followed by clusters of tiny, reddish pimples. Blisters then form and erupt, the fluid eventually hardening to a yellowish crust. The person feels intense itching, burning and pain. The oozing of blisters is uncomfortable but, contrary to popular myth, the liquid is NOT re-infective—only urushiol is an irritant. Mild cases last 5-12 days, while severe or untreated rashes can last 3-5 weeks.

After exposure to the plant(s), one should:

- ➤ Immediately wash the affected skin with an alkaline soap
- ➤ Wash affected clothes, tools, pets, etc. to avoid further contamination.

If a rash does develop, which may occur within a few hours after contact or as long as 3-5 weeks later, several palliative treatment options may be considered:

- Leave the rash open to air or cover it loosely to allow oxygen to reach the skin's surface
- Keep it clean, e.g., apply warm-water compresses and change the sterile bandage often
- To relieve itching, use calamine lotion or OTC anti-itch treatments containing zinc acetate, diphenhydramine HCI, menthol zinc oxide, or hydrocortisone
- Stay cool, since heat and perspiration can increase itching.

Certain more serious symptoms and circumstances warrant calling a physician, such as:

- Extensive rash on more than half the body, or a rash near the eyes, mouth or genitals
- Extreme or severe swelling and/or redness
- Smoke inhalation from burning plants
- Fever.

More information is available from the American Academy of Dermatology at 888-462-3373.

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MPhA is looking for original works. If you are a member and have paper or would like to write an article for an issues of the *Maryland Pharmacist* send your typewritten copy to MPhA, 650 W. Lombard Street, Baltimore, MD 21201-1572 or FAX to 410-727-2253. Please be sure to put your name and phone number on your piece. All copy is subject to approval and space availability.

Pharmacist Licensure Examination

For the results of the Pharmacist Licensure examination visit the Maryland Board of Pharmacy's website at: ***www.dhmh.state.md.us/pharmacyboard/pharmlic/0600rost.htm***. The results are updated every Friday.

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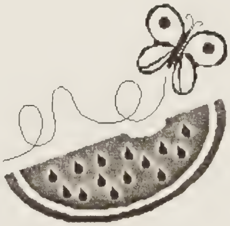

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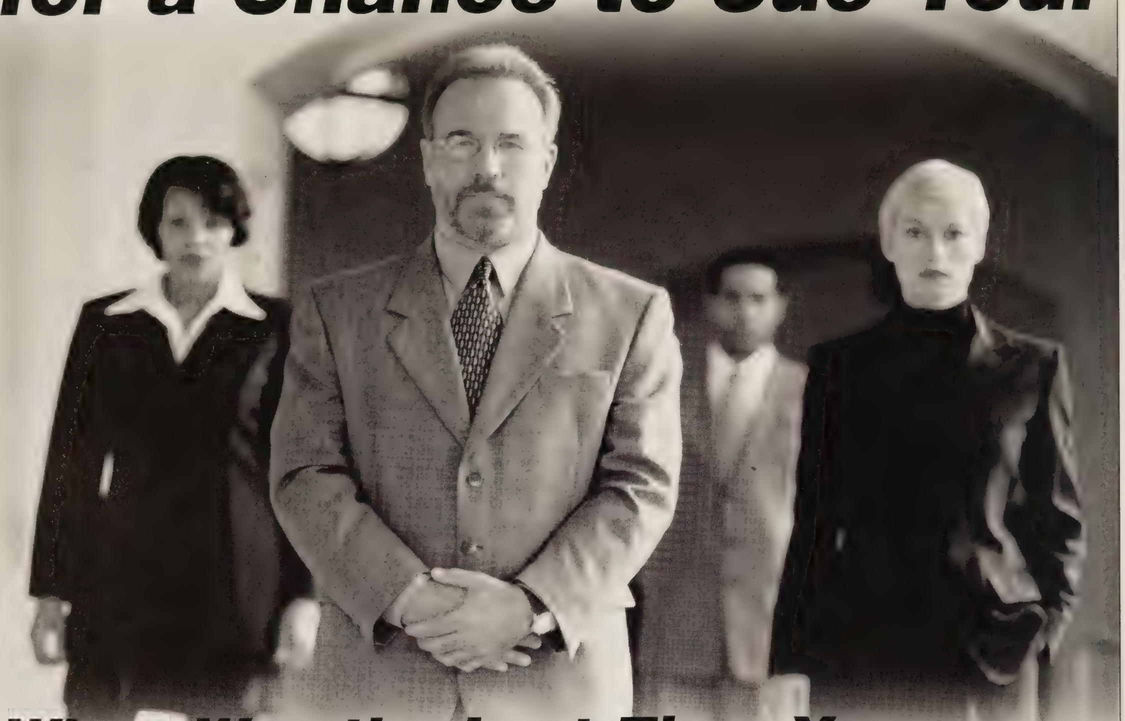

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*"Pharmacists, Technicians, and
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Maryland Poison Center

"Salicylate Poisoning"

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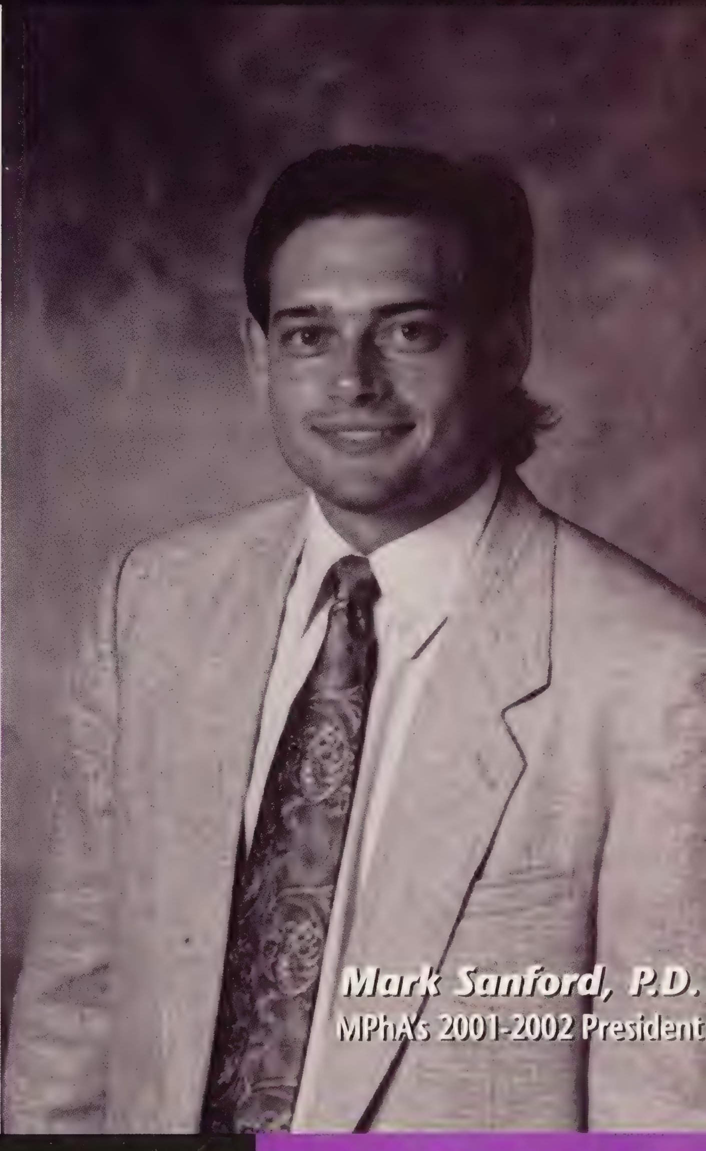

Mark Sanford, P.D.
MPhA's 2001-2002 President

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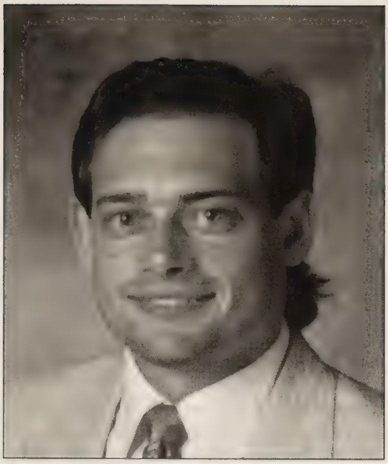

Mark Sanford, P.D., President

Change Direction–Unite and Be Heard

I would first like to thank the membership for electing me to serve as your President for 2001-2002. I had planned to publish an abbreviated version of my June 11th President's address at the 119th Annual Convention in Ocean City, Maryland. However, I was asked by several individuals to publish my remarks in their entirety. Therefore, the remainder of this article is the speech I presented on June 11, 2001.

It is with great pleasure that I address you for the first time as President of the Maryland Pharmacists Association. It is a tremendous honor to follow in the footsteps of so many great leaders in Maryland pharmacy who have held this office before me. I have had the fortunate distinction of growing up in the pharmacy environment and knowing many respected and admired individuals throughout my lifetime, many of whom have been influential in my career decisions and my professional aspirations. There are many of you here in the audience this evening and many others who are not present tonight. I will not mention everyone who has left me with a lasting impression, but I would be remiss if I didn't mention a few.

Let me begin by recognizing my immediate predecessor, Murhl Flowers. Murhl has been a true leader and a friend for many years. I am privileged to have worked closely with Murhl this past year, and I anticipate we will work closely in the upcoming year to continue many of the efforts we began this past year as well as explore new ideas to assure Maryland pharmacy continues to progress.

Now that I have recognized my most recent influence, I would like to share one of my earliest memories of MPhA. This memory dates back some 25 years ago to a convention of the then called Maryland Pharmaceutical Association at the Carousel Hotel here in Ocean City Maryland. I was in grade school at the time, but have very vivid and fond memories of sharing time with Henry Seidman. Every year following the crab feast at the Berlin Fire Hall, after having had our fill of crabs and riding around the town of Berlin on the back of a fire truck, my family and I would invariably end up at an ice cream parlor with Henry and his wife Frieda. I remember his passion for pharmacy, and I remember his drive. He was also entertaining, and always showed a genuine interest in people. Perhaps I also remember Henry so well because he was a mentor and one of the driving forces behind another great pharmacy leader who I have known for many years and who has undoubtedly had one of the strongest influences in my life.

The man I am speaking of is my father, Ron Sanford. As many of you know, Ron is passionate in his own way. He stands up for what he believes, and he has been a distinguished and influential leader of Pharmacy in Maryland. He served this organization for many years and is also a past President. To follow in his footsteps and stand before you today as President of MPhA is extremely humbling and gives me great pride. That pride is not only in myself, but also a renewed pride in my father and all of the other past presidents of this organization, as I now have the extreme honor and distinction of adding my name to that long and distinguished list.

I would ask your indulgence as I recognize just a few of the other prominent individuals who have had a tremendous impact and who I am very fortunate to have had the opportunity to know and work with over the years. A personal friend of the family and a man of great distinction, George Voxakis. George is an icon for pharmacy in Maryland and I have nothing but respect and admiration for all he has done for the profession and for the lasting impression he has left on me.

I have had the good fortune to work very closely with Phil Cogan over the past several years. He has an undying devotion to pharmacy. He has been an excellent example to me as we have worked on difficult and timely projects such as the bylaw revisions and editing the Pharmacy Law Book. Working with Phil brings memories of conventions past, in particular, I remember sitting in the audience when Phil was installed as President.

I have had the pleasure of working closely with Mel Rubin on

Board of Pharmacy committees and the Law Book review process. I have known Mel since I was a child, and Mel was perhaps one of the reasons I became involved with MPhA. It was when Mel was appointed to the Board of Pharmacy that Dave Miller asked me to fill Mel's remaining term to the Continuing Education Coordinating Council. I gladly accepted this challenge, was asked to serve an additional three-year term, was subsequently elected to serve as Vice Speaker of the House, then Speaker, then a three-year term as Trustee, followed by Vice President, President-Elect, and now President.

There are many others who I have fond memories of and who have helped guide me throughout my professional career. I apologize for not having the time to mention everyone. However, at this time I would like to change directions and focus on the upcoming year for MPhA. Change directions is an appropriate way to introduce my goals for the upcoming year. There is no doubt that pharmacy continues to evolve.

I reflect back to a paper I wrote nearly ten years ago during graduate school. The paper was titled "Challenges of Marketing Pharmacy Services in a Changing Managed Care Environment." Take note of four key words or phrases in this title: CHALLENGES, PHARMACY SERVICES, CHANGE, and MANAGED CARE. These four themes exemplify the changing direction and perpetual evolution of pharmacy.

Pharmacy continues to face many CHALLENGES. Certainly the pharmacist shortage, increased prescription volumes, demand for more complex services, and the need for improved patient outcomes through pharmacist involvement in therapeutic and disease state management of patients are among the challenges facing us today. The focus of the past several years has revolved around portraying pharmacy as a provider of a PROFESSIONAL SERVICE, not simply a product. This is one of many CHANGING aspects of pharmacy and our role in the health care team.

Dean Knapp very poignantly expressed the absolute necessity of pharmacy to move from a product oriented focus to a service oriented profession in his remarks in an Alumni Newsletter in 1994. To quote the Dean, "Pharmacy as a profession cannot survive if its income is dependent upon profits from purveying commodities. The only way to survive as professionals is to position ourselves in the midst of patient care." This theme still rings true today, and continues to be one of the critical challenges for pharmacy here and now.

I mentioned managed care. Managed care was at the forefront of healthcare reform at the time. The MANAGED CARE ENVIRONMENT continues to grow and produce new CHALLENGES as we move into the future. The CHALLENGES we now face represent a CHANGE IN DIRECTION. That change is important and significant. The change I refer to is that the challenges we now face are issues that effect all facets of pharmacy regardless of practice setting. These issues, such as collaborative practice, medication management, medication administration, and the pharmacy manpower shortage, just to mention a few, beg for pharmacy to band together and promote a united front. This is extremely important and represents a significant change in that many issues in the past have served to divide pharmacy leading to fragmentation and conflict within our own ranks. Our future depends upon breaking down these barriers and working together as one profession for the good of all pharmacists. We have made great progress this past year in this regard. It is my intent, and my primary goal, to continue the pursuit of unity and a coordinated effort among all pharmacy organizations in Maryland to come together to assure our profession not only continues to survive, but to allow us to thrive as the integral part of the healthcare team that we all know we are.

I want to stress the importance and the urgency of the need for the pharmacists of Maryland to unite and be heard. Our state is lagging behind many other states in making progress in some of the critical areas I have mentioned. It is crucial that we make a concerted effort to influence our future, and the effort must include coordinating our efforts and presenting one voice for all pharmacists.

Pharmacists are able to administer medications, including immunizations, in 31 states. WHY NOT IN MARYLAND?

There is approved legislation permitting pharmacists to engage in collaborative drug therapy management in 30 states. WHY NOT MARYLAND?

Forty-eight states allow pharmacists to perform laboratory tests such as glucose monitoring and cholesterol screening. Maryland is one of only two states currently not able to provide these vital services that help us better manage our patient's medication needs and improve patient outcomes.

Is this because Maryland pharmacists are not smart enough? Of course not! Do we lack the skills and the knowledge base? Are we incapable of developing new skills necessary to perform these tasks? Again, I say the answer is no?

Do we lack motivation? Are we afraid of change? I would say that those of us here in this room tonight certainly do not fall into this category, but perhaps we are the exception. We are here because we are active in our profession and because we want to be at the forefront of change and expand the parameters of our practice to better serve the needs of our patients. However, apathy is a pervasive problem among the vast majority of the more than 6,000 licensed pharmacists in Maryland. There is a tremendous lack of involvement and lack of commitment by many of the pharmacists practicing today. This needs to change!

What can we, as Maryland pharmacists, do about these and other important initiatives for pharmacists and the future of our profession? I again stress the need to coordinate efforts among all facets of pharmacy and present a strong, unified voice. This must be a priority.

Additionally, we must continue to build our membership. This too is a priority that is critical for the future and the continued success of MPhA. We are only as strong as our members. We must strive to build our membership base. This will increase our strength and influence in healthcare and related legislation effecting our profession. The strength in numbers in conjunction with a unified front will allow us to shape our profession and control our destiny. It is imperative that we step up to this challenge and lead the way. We must lead the way and be the driving force of change. We must become more proactive and less reactive. We must shape the future of pharmacy and not let the future shape pharmacy for us.

My third priority is to assure the continuation of the ambitious fundraising efforts already in progress. This has been a long-term goal for MPhA and will support completing the total renovation of the Kelly Building. We have made extensive renovations to the outside of the Kelly Building and have plans to enhance the interior including redesign of the office space, professional display of the numerous museum pieces, and transformation of the basement into a showcase for pharmacy in Maryland with two period pharmacies. One a 19th century pharmacy and one a 1950's vintage pharmacy with a fully functional soda fountain. The Kelly Building will truly be a showcase that MPhA will display with great pride. The Kelly Building will continue to serve as our headquarters, meeting facility, and also a venue for receptions.

This is the time to embrace change and forge ahead. The goals and priorities I have set for the upcoming year are ambitious goals. However, I believe we will accomplish these goals through the dedication, hard work, and devotion of your elected officers and trustees in conjunction with the support of the membership and the collaboration with all Maryland pharmacists and the other Pharmacy Associations in Maryland. Pharmacy is an important profession and pharmacists are critical members of the healthcare team and an absolute necessity to promoting the safe use of medications and improved outcomes for our patients.

I pledge to you that I will do my best to work with the newly elected officers, Board of Trustees, and MPhA staff to accomplish these goals and uphold the ideals of pharmacy as we shape our future and continue to promote pharmacy as an imperative and integral segment of healthcare.

TOXNOTES: Metformin

A child was brought to the Emergency Department (ED) after ingesting one of his grandmother's Glucophage® (metformin) 850 mg tablets. Is he at risk for significant hypoglycemia, as seen with the sulfonylureas?

Metformin, the only biguanide available in the US, is approved for the management of type 2 diabetes mellitus. Metformin is not structurally or pharmacologically related to the sulfonylureas, which include glipizide (Glucotrol®) and glyburide (Diabeta®). Let's clear up any confusion regarding overdoses with these two classes of antihyperglycemic agents!!!!

Unlike sulfonylureas, metformin does not affect insulin release and therefore does not lead to a state of hyperinsulinism. Hypoglycemia, a common finding following overdoses with sulfonylureas, is a rare finding following metformin overdose. However, lactic acidemia and electrolyte disturbances are reported following overdoses with metformin. The focus of management of metformin shifts from watchful observation for hypoglycemia to watchful observation for metabolic acidosis and lactic acidemia. The patient populations at risk for the development of lactic acidemia include patients on chronic metformin therapy, those with renal failure or cardiac failure, and advanced age. Finally, pediatric sulfonylurea exposures are referred to the ED for blood glucose monitoring every 1-2 hours, regardless of the dose ingested. In contrast, a multicenter case series reported that unintentional ingestions of less than 1700 mg metformin (2 X 850 mg tablets) in healthy toddlers are not associated with hypoglycemia, lactic acidemia or poor outcomes *(Spiller et al. Ann Pharmacother 2000; 34:1385-8)*. Therefore, only significant metformin exposures are referred to the ED.

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Maryland Poison Center

Pennsylvania Pharmacists Association Seeks Executive Director

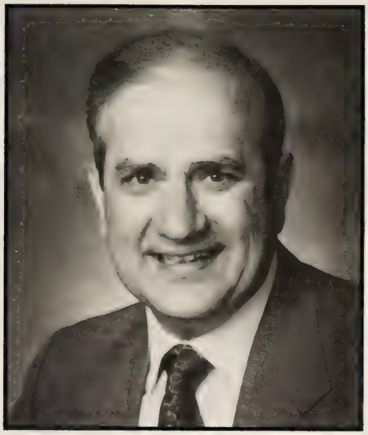
The position requires that the applicant have at least a bachelor's degree in pharmacy, other health care discipline, or business administration. Experience in association administration, health care and lobbying is preferred. Must be a highly motivated individual, an effective communicator, and a consensus builder, with demonstrated leadership abilities.

To apply, submit a letter of application and current resume or curriculum vitae to: David M. Smith, R.Ph., Chairperson, Search Committee, 19 Erica Drive, Indiana, PA 15701 or epmail to: smithers@usaor.net.

Application deadline: September 15, 2001

The position description is available at www.papharmacists.com

PPA



President Bush's Discount Prescription Drug Program

Howard R. Schiff, P.D.
Executive Director

To those of you hiding in a cave or in the jungle somewhere and haven't heard, President Bush's "first step" in providing prescription drugs to Medicare recipients is a "discount" card.

As summarized by ASCP, the Bush Plan is expected to:

- ➡ Make all Medicare beneficiaries eligible.
- ➡ Have cards available to seniors early next year.
- ➡ Provide discounts of up to 10%-25% in retail settings and discounts of up to 30%-40% on generics through mail order services.
- ➡ Offer discounts on at least one brand and/or one generic in each therapeutic class.
- ➡ Charge a nominal fee for enrollment of no more than $25, based on the formulary of the particular plan.
- ➡ Allow beneficiaries to enroll in only one plan at a time with the flexibility to switch plans on a semiannual basis.
- ➡ Have a single computer system, administered by the consortium of PBMs, used to track beneficiaries and make sure they are enrolled in only one program.

These are the cards that community pharmacists see every day; most are indistinguishable from insurance cards. As pharmacists well know, they place the burden of reduced prescription cost squarely on the community pharmacy.

Craig Fuller, CEO of NACDS, has pointed out, the five major PBMs were at the President's news conference announcement. They will be the primary beneficiaries of this program. They will be able to increase their population served, their mail order programs and their pocketbooks. Seniors may see a discount on some medications. It's amazing that these entities can conspire together while one community pharmacy cannot talk to another. MPhA had a five-year FTC court order restricting our activities because of some alleged violation of the law. (As I write this article, I receive notice that NACDS and NCPA have jointly sued).

Imagine this scenario on any day in any pharmacy. A patient enters the pharmacy with six scripts and asks the price. All necessary information must be entered in the computer. The total cost to the patient is $360. They are informed and the response is one of these statements:

a. I was paying $358 before. What's the big deal?
b. I only have $100. Cut the prescription quantity.
c. Just give me the little white pill.
d. You SOB. You're too high, I'm going to *blank-blank* pharmacy.
e. I feel fine. I'm not going to get any of these prescriptions filled.

Meanwhile, the scripts are piling up. Because of a bad quarterly financial report, your tech has been cut, you're working alone and your bladder feels like it's going to explode. Does that script say 0.5 or 2.5mg? And you wonder why we have a pharmacist shortage?

Some members of the President's own party are unhappy about this plan. There are several proposals to help seniors that involve expenditures of funds by the government. During the debate earlier this year in Annapolis, it has been said, any meaningful prescription benefit must involve contributions from the patient, pharmacy, manufacturer and government and, assuming money is a problem, should be limited in scope to certain disease states.

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Pharmacists, Technicians, and Technology: Serving the Patient

Schering Report XXIII

Pharmacy Progress

During the past 10 years, the pharmacist, the practice of pharmacy, and the pharmaceutical industry have been involved in a period of powerful change. In fact, in a decade that may have been the most intense period of upheaval ever experienced in the American healthcare system, pharmacy clearly played a central role.

Now, as we move into a new century, the focus on pharmacy continues. How important has pharmacy become? Let's look at a few facts.

Studies of the impact of pharmacist involvement on improved health have become legion. In the past several years alone, numerous studies have shown the value and impact of pharmacists on patient care.

Project ImPACT, one of the most important of the recent studies, stated that the risks for myocardial infarction can be reduced by one third when pharmacists participate in patient care. According to US Surgeon General David Satcher, this study "shows the positive impact pharmacists can make on their patients' health." He added that an active role for pharmacists in patient care "will be of benefit to everyone."

In December 2000, the US Department of Health and Human Services issued a major report decrying the worsening shortage of pharmacists. The report said that the number of unfilled pharmacist vacancies nationwide has nearly tripled in just 2 years, stopping just short of calling the situation a national crisis.

"Pharmacists take a more personal approach to people's therapy. We are more accessible than a doctor."

At least 24 states allow the formation of collaborative practice agreements, by which physicians delegate patient management responsibilities to pharmacists in varying degrees.

According to the president of the American Pharmaceutical Association, "In 10 years... pharmacists will have total responsibility for designing therapeutic regimens and managing them to the patient's advantage."

We know that a dramatically increasing number of prescriptions are now written each year—more than 3 billion last year alone. Yet the number of newly graduating pharmacists is actually lower than in past years, adding to the nationwide shortage of full-time pharmacists.

"The pharmacy is not like it used to be. Insurance companies are dictating their drug of choice. It's not the same."

By any of these measures, the challenges for the pharmacy profession are many, and the opportunities are great. Opportunities include the potential for having a major impact on the healthcare system as a whole. Given the increasing importance of the profession, it becomes more important to know whether this potential can be realized. When asked, however, the best most experts are willing to say is, "maybe."

Why? What's holding the profession back? In most cases, the answer is "circumstances beyond our control." These circumstances include the shortage of pharmacists and the growing prescription volumes, along with managed care's ever-expanding demands on pharmacists' time. To understand the impact of these circumstances, we must first assess the situation in-depth. We must find out what it's like on the front lines. We need to answer some questions: Are pharmacists overwhelmed, or are they relishing the challenge? Are patients being served, or are they lost in the shuffle? If things are going to improve, how is that going to happen?

This year, the Schering Report, which has been reviewing the state of the pharmacy profession for more than 2 decades, has moved aggressively to answer these and other pivotal questions.

This year's Schering Report analyzes the opportunities and the obstacles that face the industry. We probe the "circumstances beyond our control," and measure what their impact may be. We look at key concerns, such as the increasing demands on the profession, and related issues, such as the impact of technology in helping pharmacy cope with these changes.

In the Schering Report, we evaluate some of the new technologies and possible time-savers, such as Internet pharmacy, pharmacy technicians, centralized dispensing, and interactive voice response systems. We consider the outlook for each, and assess the role they play in helping pharmacy achieve its potential.

This Schering Report seeks an in-depth understanding of the tools that are helping pharmacists and technicians improve patient services. We investigate which technologies are popular and which are not—and why. We learn how the perceptions of pharmacists and technicians to these tools are similar and how they differ.

The report follows a long line of Schering Reports that have been published for more than 20 years. In greater depth than ever before, this year's report measures the state of the profession and, for the first time, includes feedback from pharmacy technicians. It also updates important aspects of the research done in the previous year's report. This is especially vital in the 21st century, with pharmacy facing rapidly evolving issues such as Internet pharmacy, issues where year-to-year results are so meaningful.

"There are good pharmacists and bad ones. If you happen to hook up with a good one, you will get the best care you can get."

More importantly, this year's report will be updated on a continuing basis, with comparative data gathered and tabulated continually throughout the year. As a pharmacist and member of the Schering Pharmacist Response Network™—Schering PRN—you will have access to this ongoing research through the Schering PRN Web site. If you are not a member, just call 1-800-SCHERING and our operator will gladly enroll you.

Also for the first time, Schering Report XXIII was developed with the advice and counsel of major pharmacy and technician organizations. We believe that the involvement of the American Pharmaceutical Association (APhA), the National Association of Chain Drug Stores (NACDS), the National Community Pharmacists Association (NCPA), the National Pharmacy Technician Association (NPTA), and the Pharmacy Technician Certification Board (PTCB) has helped make this report a major study of the pharmacy industry.

We hope you agree.

Technology, Technicians, and Tomorrow

This year's Schering Report encompasses 400 in-depth telephone interviews—200 pharmacists and 200 pharmacy technicians—throughout the nation. The respondents work in both the chain and independent settings, with a slight skewing toward the chain setting.

Pharmacists' Average Age	**40**
Independent	43
Chain	38

Characteristics of the study population are shown in the two charts on this page. We have focused on location of employment and individuals' age as the two key parameters.

Technicians' Average Age	**37**
Independent	39
Chain	36

While age is an important indicator, we also believe that the amount of experience in the pharmacy itself is a key factor. In our survey, the amount of experience is directly reflected by the years of graduation of our respondents. We found that the majority of pharmacists received diplomas in the 1970s and 1980s, while technicians showed a remarkably even distribution, with almost one third of the responders having graduated in each of the past 3 decades.

"This is an interesting interview. I wouldn't have expected it. It's nice to know that someone out there cares."

Where Pharmacists Work	
Independent	43%
Chain Store/Grocery/ Food Chain	57%

More than half of the technicians surveyed ended their formal education after high school, and a small percentage have a 2-year community college degree. About one third have a degree from a 4-year college. Technician training is typically acquired in the pharmacy itself, although 31% of the technicians attended an outside training program.

"The technicians are performing more tasks. We (the pharmacists) are doing less counting and more filling."

Nine of 10 pharmacies employ pharmacy technicians, making them an integral part of the retail pharmacy picture. We will therefore compare the attitudes and experiences of pharmacists and technicians throughout the country.

Most of the technicians said that their responsibilities are diverse. The pharmacists agreed, saying that in their stores technicians do everything from filling and dispensing prescriptions to adjudicating claims and handling many third-party issues. Some technicians said that they also counsel patients regarding over-the-counter drugs.

Three quarters of the technicians said that their role has not changed in the past year; but among those who said their role had changed, most said that the change was related to professional advancement and greater responsibility. More than half of the technicians saw their role changing in the future, again primarily in terms of receiving promotions within the store or chain.

Where Technecians Work	
Independent	55%
Chain Store/Grocery/ Food Chain	45%

Technician's Perception of How Role Has Changed

Chain		*Independent*
46%	Advancement	38%
21%	Handle Rxs	13%
8%	Counsel Patients	8%
17%	Third-Party Issues	0%

Technicians strongly believe that pharmacists give good direction and guidance and that most pharmacists make effective use of their technicians. It was interesting to note that there was a significant difference on this question between chain technicians and those working in independent stores, with 85% of chain store technicians feeling fully utilized, compared with only 58% of those who are employed by independents.

"I call the doctor's office, I call the insurance companies, I take care of complaints from doctors and patients. I get on the phone with the hospital or the doctor if patients can't remember what medications they're taking. I'm a technician and I can do so much."

Breaking New Ground

For pharmacists and technicians in a retail setting, achieving their potential means providing better service to their patients. It is clear from the results of our survey, however, that the nuts and bolts of their jobs are increasingly demanding, and that finding time for patients is actually becoming more difficult in many cases.

These are some of the "circumstances beyond our control" referred to in the introduction to this report. For pharmacists, managed care requires more time than ever before; there are new drugs to understand; increased utilization means that more time is required to dispense; and new demands on their time seem to pop up almost every day. It is certainly understandable, therefore, when pharmacists say that they spend less than 3 minutes counseling the typical patient regarding a new prescription—and spend even less time on refills.

Time to Dispense Prescription Has Changed in Past Year

Pharmacist	
Increase	65%
Decrease	9%
Remained the Same	26%
Technician	
Increased	42%
Decreased	14%
Remained the Same	44%

What can be done to address this situation? How can pharmacy possibly achieve its potential under these circumstances?

Patients Likely to Use Internet Pharmacy in Future

2000	40%
2001	39%

One answer may be new technology. The technology usually viewed as having the greatest promise is the Internet, and that is where we will begin our exploration.

The vast majority of the technicians and pharmacists surveyed have access to the Internet either at home or at work. Pharmacists tend to browse the Internet at home more than technicians do, but both groups appear to be Internet-savvy. This year's sample of pharmacists reported a dramatic increase in access over last year's group.

"Computers have increased my workload in some ways and helped in other ways."

More respondents than not say their pharmacies have Web sites, with 55% of pharmacists reporting a site and 63% of technicians saying they also have one. Not surprisingly, chain stores are much more likely to have sites than are independents.

Yet neither pharmacists nor technicians are convinced that their patients will make much use of on-line pharmacy services. As shown in the chart at left, only 39% of the pharmacists thought that their patients would use an on-line service. This is comparable to the views of technicians.

Patients Refilling Prescriptions on Website

Independent	20%
Chain	58%

Pharmacists who have a store Web site were much more optimistic, probably because more of them see on-line pharmacy at work on a regular basis. For example, of those pharmacists whose stores have a Web site, just over 50% said that their typical patients refill prescriptions on-line.

Respondents with Internet Access

2000	76%
2001	91%

On the other hand, a small minority of all pharmacists—only 12%—said that their stores are currently using e-mail to communicate with patients.

"They are treating us like this is a McDonald's. We work 13 hours without a break, not even lunches. These are prescriptions; it's not like hamburgers where the worst thing that can happen is that the pickle is wrong."

Innovations and Information

The Internet is only one of several technologies that may help pharmacy achieve its full potential. Therefore, we asked about the impact of robotics, automated dispensing systems, centralized filling of prescriptions, electronic prescribing, and other recent innovations.

First, we asked what methods are being used to free up time for patient services. The most common method, by a large margin, was the use of technicians.

Other methods included:

- Centralized processing of third-party problems
- Electronic prescribing
- Standardized pharmacy benefit cards
- Access to patient-specific clinical information
- In-pharmacy telephones that patients can use to call their doctors for refills
- Menu-driven interactive voice response systems for refills and information
- Ordering of refills on the Internet

Of these methods, in-pharmacy telephones, interactive voice response systems, and Internet refills were most frequently mentioned as available time-savers. Two of the options that were mentioned least were centralized processing of third-party claims and centralized filling of prescriptions. In this context, it is interesting to compare the availability of these options versus their perceived effectiveness, as shown in the following chart.

> ***"Insurance companies need to make it easier on pharmacies by having standardized insurance cards."***

Only 5% of the pharmacists said that their sites employ centralized processing or dispensing. One of the reasons that these time-savers may not have caught on is simply unpopularity. For example, even though nearly half of the pharmacists acknowledged that centralized dispensing would probably free up more time, nearly three quarters still said they don't favor it. As for the technicians, they believe that both types of centralization either have no effect on time or actually take more time.

While centralized processing and dispensing are obviously unpopular, electronic prescribing shows the other side of the coin. This technology is also relatively uncommon in the pharmacy world, and most pharmacists say that doctors hardly use it. Yet, nearly two thirds of the pharmacists said that electronic prescribing would free up more time, and 72% favored increased use of this innovation.

Effectiveness of Options in Freeing-up Time—Unaided

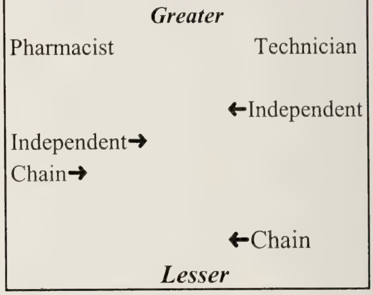
1 Use of Technician
2 Standardized Pharmacy Benefit Card
3 Electronic Prescribing
4 Centralized Processing of 3rd Party Rxs
5 Robotics or Automated Dispensing
6 Centralized Filling of Rxs

The use of automated dispensing machines or robotics is another little-used option, and deservedly so—few pharmacists believe that it is an effective time-saver. Numerous implementation issues are related to this technology, and until those issues are resolved, this option will generate only limited support.

One of the most popular options—the standardized pharmacy benefit card—doesn't represent highly advanced technology. It's actually a very simple idea, but according to the surveyed pharmacists, it works. In fact, 60% consider it the most effective method of freeing up their time. This perception may indicate that other relatively basic ideas might be worth greater consideration by the pharmacy community.

One such idea is access to patient-specific clinical information. The overwhelming majority of pharmacists and technicians believe this is a valuable, if quite basic, improvement that would be very helpful in providing better patient care services. The fact that pharmacists do not have access to such basic information as blood pressure readings, glucose levels, cholesterol levels, and the desired outcome of therapy seems illogical at best, and potentially dangerous at worst. Yet only 40% of pharmacists and 31% of technicians said they had that kind of access.

Access to Patient Information



Patient-Centered Pharmacy

A key focus of our survey was patient care and, as noted, a crucial aspect of enhancing patient care is time. Clearly, dispensing prescriptions is a time-consuming activity and much of the new pharmacy technology is designed to make it more efficient. We asked both groups if the time it takes to dispense prescriptions has changed over the past year.

Percent of Time Spent with Third-Party/Drug Benefit Issues

Overall Total	27%
Technicians	24%
Pharmacists	29%

The news is not good. In all, 65% of the pharmacists said that the amount of time to dispense prescriptions has actually increased in just 1 year. Many technicians agreed with this assessment.

While dispensing is important, it is only part of how the pharmacy personnel spend their time. As everyone in healthcare is painfully aware, managed care is another unavoidable and highly time-consuming player in the process. It is not surprising, therefore, that three quarters of both pharmacists and technicians report spending as much as 30% of their time each day on the paperwork, phone calls, and other activities required to manage and resolve third-party and drug-benefit issues.

Patient counseling is where many pharmacists and technicians would rather be spending their time—and it is where many patients would like their time spent. Therefore, it is good news that pharmacists report that they are counseling most of their patients, particularly regarding new prescriptions.

For example, on new prescriptions, most pharmacists counsel between 90% and 100% of their patients. And, not surprisingly, four of five technicians said that they do not counsel patients at all.

Patient Counseled When Presenting a New Rx

Chains	8 out of 10
Independents	2 out of 10

While these results might be expected, the amount of time pharmacists actually spend with patients appears to be less than they would like. When asked, the majority of respondents said they spent an average of 1 to 3 minutes counseling on new prescriptions, and nearly 50% said they spent 1 minute or less on refills.

"Something needs to be done so that the insurance companies are part of the solution. Now, they are most of the problem."

Putting the Future to Work

Clearly, there are many positive aspects of pharmacy today, and there is much reason to have hope for the future. However, one issue caused our pharmacist survey sample much concern. This is an issue that is truly out of pharmacists' direct control, yet the pharmacists believe that the means of resolving the issue is already at hand.

We refer to the issue of education. The pharmacists surveyed overwhelmingly believe that today's pharmacy school graduates are not trained for—and not interested in—careers in retail community pharmacy. They said that new graduates are far better equipped to practice in an institutional or managed care setting than in the community. And they are curious why the community setting receives such little emphasis in today's educational curricula.

Several pharmacists made their concerns quite plain. They said that the schools seem to believe that the day of the community pharmacist is almost over.

Pharmacy Graduates: Preparation for Institional vs. Community

Institutional/ Clinical Setting	70%
Community-Based Practice Setting	30%

They worry that educators have accepted as fact that the entire country will be filling prescriptions on the Internet in a few years.

One pharmacist said, "I look at this business thinking that if I'm not prepared to move into a clinical setting, they don't need me as a pharmacist. So I went back to school, and they showed me a future where doctors simply go on the phone to a remote prescription service and the entire transaction is handled like a centralized process. That scared me."

One remedy for these and other concerns was suggested by many of the pharmacists and technicians surveyed. They believe that an active role for pharmacy and pharmacy technician associations is vital to the enhancement of pharmacy practice. However, only a slight majority—55%—believe that pharmacy associations are supporting the changes needed to allow pharmacists to spend more time with patients at the community pharmacy level.

For pharmacy to prosper in the future—for pharmacy to prove the experts right and achieve its full potential—an organized effort among the associations may be an essential step.

Whether Pharmacy Associations Support Change

(Based on Pharmacists' Perception)

Try to Enact Changes	12%
Doing a Good Job/ Beneficial	9%
Not Doing Enough	14%
Associations Doing Nothing	7%
Associations are Out-of Touch	1%

"Pharmacists today are being trained for a clinical setting, but they usually don't get a job in a clinical setting. They are being over-educated and don't have any choice in the matter. I mean, who wants to go to school for 6 years to get a job in a retail pharmacy?"

Schering Laboratories believes in the power of these professional associations to effect positive change. This report is one example of how associations, working in tandem with pharmacists and the pharmaceutical industry, can bring important, insightful information to light.

Schering also believes in the power of the pharmacy community and the pharmacists who are on the front lines every day. Pharmacists are the people who manage more than 3 billion prescriptions per year—even as they cope with the deepening shortage of pharmacists. They are the ones who deal directly with the increasing demands of both managed care and informed, assertive consumers. And they are the ones who must respond to growing concerns about patient safety, an issue that requires even greater attention.

The pharmacy community and the professional associations can make a difference in all these areas, Schering believes. Together, they can increase the utilization of technicians, improve pharmacist access to patients' clinical information, expand electronic prescribing by physicians, and implement standardized pharmacy benefit cards, among other things. In other words, they can bring to life the very solutions that pharmacists and technicians identified in this year's Schering Report.

"They [associations] are doing everything they can, but if they don't get support from pharmacists, they can't do any more."

We also want to play a role in improving the future of pharmacy. One step we can take is to continue enhancing the Schering Reports. To do this, we will make sure that issues identified each year are carefully examined. Next year's Schering Report will include an in-depth examination of the critical issue of patient safety. We will explore the parameters of this issue and all of its effects. And we will uncover the grassroots ideas offered by you and other pharmacists to determine how these solutions are working in practice. For pharmacy to reach its full potential, all of us must work together. The opportunity is there. The people are willing. Now, it's up to all of us to make it happen.

About the Schering Reports

This is the 23rd in a continuing series of annual research studies begun by Schering Laboratories in 1978 and dedicated to exploring trends and issues affecting the business and science of pharmacy.

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MARYLAND POISON CENTER 1-800-222-1222

Salicylate Poisoning

Jean C. McGrath, Pharm.D.
Clinical Toxicology Fellow
Maryland Poison Center

Background/History:

Salicylates have a long history of use from the time of Hippocrates to the Middle Ages to the synthesis of the salicylic acid derivative aspirin by the Bayer Company in the 19th century. Since that time, aspirin and other salicylates have been prescribed worldwide. With the development of alternative analgesic/antipyretic drugs such as acetaminophen and ibuprofen, there has been a decrease in the use of salicylates. The association of salicylates with Reye's syndrome has also caused a decrease in pediatric use. Salicylates in their various forms have been used as inhibitors of platelet aggregation, analgesics, antipyretics and anti-inflammatory agents.

Kinetics/Metabolism:

Salicylates are rapidly absorbed from the stomach and small intestine in therapeutic doses. In overdoses, delayed absorption occurs with formation of insoluble concretions, with ingestion of enteric-coated tablets, and with co-ingestants that affect gastric emptying. The type of salicylate may also affect absorption. Aspirin is rapidly hydrolyzed to salicylic acid by esterases. Elimination kinetics are nonlinear; therefore, the higher the dose the longer the half-life. At therapeutic doses the half-life is approximately 2 to 4 hours while in overdose situations this can be as long as 20 hours.

Available forms:

Salicylates are available in various products as tablets, capsules, liquid and effervescent tablets. They are also available as creams and ointments for topical application. There are many forms of salicylates other than aspirin, such as methyl salicylate, sodium salicylate, bismuth subsalicylate, magnesium salicylate, salsalate, and others.

Salicylate content of common products:

- ***Aspirin (regular and enteric coated)***: 81mg; 325 mg to 650 mg per tablet.
- ***Methyl salicylate (Oil of Wintergreen)***: one ml of 98% grams of aspirin-equivalent. Children can be exposed to high doses of salicylates through the use of liniments and ointments containing methly salicylate. Since these products often contain up to 30-40% methyl salicylate, 1 to 2 teaspoons (5 to 10 mL) can be lethal in a small child.
- ***Pepto Bismol***: contains bismuth subsalicylate. One ounce of regular strength Pepto Bismol contains 350 mg of aspirin-equivalent and each regular strength tablet contains 131 mg of aspirin-equivalent.
- ***Herbal/Chinese Products***: tiger oil, white flower oil and golden lion shield medicated oil all contain various forms and amounts of salicylates.

Clinical manifestations/ Presentation:

Patients usually present with fever, tachypnea, tinnitus, lethargy, nausea, vomiting, hyperventilation and respiratory alkalosis. Vomiting usually occurs 3 - 8 hours after acute ingestion. In severe intoxication pulmonary edema, coagulopathy, seizures and coma may be seen. Salicylates interfere with the Krebs cycle, eventually leading to ketosis and anion gap metabolic acidosis. Respiratory alkalosis presents early in overdose while increased anion gap metabolic acidosis is seen in late and severe overdoses.

Many of the symptoms of acute and chronic toxicity overlap. In chronic poisoning, symptoms usually have a slower onset, and symptoms are often overlooked or thought to be part of the patient's underlying disease states. This can lead to increased morbidity and mortality in the chronically poisoned patient.

Acute Ingestion

Overdose
Younger patients
Rapid progression of symptoms
High incidence of co-ingestants
Early presentation
Initial mental status is normal (except if co-ingestants)
Low mortality with appropriate therapy

Chronic Ingestion

Dosing error
Elderly; parents misdosing child
Symptoms occur gradually and often misdiagnosed
Co-ingestants are rare
Late presentation
Altered mental status
High mortality

Adapted from Goldfranks, 6th Ed. 1998

Range of toxicity:

Acute ingestion

Mild toxicity: 150 mg/kg*

Moderate: 150-300 mg/kg*

Severe: $\geq$300 mg/kg*

Chronic ingestion

Repeat doses of > 100 mg/kg/day* for 2 or more days can result in chronic salicylism

**mg/kg of aspirin or aspirin-equivalent*

Lab findings:

Serum salicylate concentration should be drawn at least 6 hours after acute ingestion to ensure that a peak level is obtained. However, do not wait for the results of a 6-hour concentration to initiate therapy if the patient is symptomatic. Peak concentrations may not be reached for more than 12 hours with ingestion of enteric coated or sustained release products. Serum salicylate concentrations need to be monitored every 2 hours until a peak is achieved, and then every 4 to 6 hours to verify that they are falling. The Done nomogram is no longer routinely used to evaluate severity based on serum salicylate concentrations since it cannot be used in the chronic overdose situation, where time of ingestion is unknown, and it is a poor predictor of severity in acute overdoses especially when patients are alkalotic or acidotic. Therapeutic serum salicylate concentrations are between 15 to 30 mg/dL. As the concentration increases beyond 30 mg/dL signs of toxicity become apparent. Tinnitus is associated with levels >30 mg/dL but absence of tinnitus cannot be used to exclude the possibility of salicylate intoxication. In chronic salicylism, diagnosis is usually based on symptoms since serum concentrations do not correlate well with clinical findings.

Monitor arterial blood gases (ABG's) in symptomatic patients until acid/ base status improves. ABG's are an important part of the evaluation when the patient is acidotic since more salicylic acid leaves the blood and enters the cerebrospinal fluid and other tissues. Also obtain a CBC, renal and hepatic function tests, PT/PTT and INR in patients with moderate to severe toxicity.

Treatment:

Ingestions of <150 mg/kg of aspirin are associated with minimal clinical effects and require no specific treatment. For ingestions of 150 to 300 mg/kg, ipecac may be recommended. Ingestions of $\geq$300 mg/kg require hospital management. If there is any doubt regarding the amount or the reason for ingestion the patient should be sent to the hospital for evaluation.

Activated charcoal is the mainstay of GI decontamination. The sooner activated charcoal is given after an ingestion the greater its effectiveness. A second dose of activated charcoal may be used to decrease absorption. Bezoar formation can be a complication of salicylate overdose; this should be suspected when salicylate concentrations continue to rise even after a single dose of activated charcoal. Each gram of charcoal can adsorb approximately 550 mg of salicylic acid. Fluid resuscitation should be aggressive with intravenous normal saline or dextrose solution. Hypocalcemia and hypokalemia are associated with salicylate intoxication, and monitoring and replacement are important.

Sodium bicarbonate (1 to 2 mEq/kg) is used to treat patients with moderate to severe toxicity. Alkalinization with sodium bicarbonate decreases tissue levels and may increase urinary elimination of salicylates. By increasing serum pH, salicylates are "trapped" in the blood and prevented from crossing the blood brain barrier. This "ion trapping" can help prevent deterioration of the patient's mental status.

Extracorporeal means of elimination are used when the patients are very ill (i.e. high salicylate concentration, serious symptoms, fluid or electrolyte imbalances). Hemodialysis is indicated when serum salicylate concentrations are greater than 100 mg/dL in acute overdose (lower concentration in chronic overdose), evidence of renal failure, or persistent CNS disturbances. Hemodialysis is preferred over hemoperfusion since it rapidly clears salicylates and allows for electrolyte correction. The endpoint is a non-toxic serum salicylate concentration and clinical improvement.

Salicylism should be suspected in all patients with focal and non-focal neurological abnormalities, tachypnea, acid- base disorders and pulmonary edema. The patient's signs and symptoms should be monitored closely, along with ABG's and serum salicylate concentrations.

Interactions...

by Russell DiGate

I would like to take this opportunity to introduce myself. I am Russell DiGate and for the next six months, I will be the Acting Dean of the University of Maryland School of Pharmacy. I have been the Chair of the Department of Pharmaceutical Sciences within the School for the past four years and a faculty member for the past decade. The University of Maryland is known throughout the State of Maryland and the country as a leader in Pharmacy education and service but, perhaps less well known, is the fact that the School is also known as a leader in pharmaceutical research. I would like to briefly tell you about two projects that are proceeding in the School of Pharmacy that may eventually lead to drugs that will eventually end up on the shelves of pharmacies throughout the country.

Recently, the University of Maryland, Baltimore received a patent on a new class of peptides that inhibit mucus secretion in the lungs. This novel class of peptides was discovered by School of Pharmacy Professor Kwang Chul Kim, Ph.D. The patent has been licensed to a locally based pharmaceutical company, Antex, for further development. The significance of this discovery has to do with the fact that many lung diseases are accompanied by hypersecretion of mucus into the airways of patients. Normally, mucus serves a very valuable purpose by binding particulate matter in the lungs as well as bacteria and other pathogens. This is part of our normal defense mechanism. Hypersecretion, however, can be highly destructive. Excess mucus can clog the airways, prevent inhaled drugs from being adsorbed, and can serve as a breeding ground for pathogens. It is hoped that this new class of peptides can be developed into a drug that prevents hypersecretion and will serve to enhance the prognosis of patients suffering from chronic bronchitis, cystic fibrosis, and asthma. Furthermore, it is hoped that this class of peptides can increase the effectiveness of current inhaled drugs that are used in the treatment of the aforementioned diseases.

Another current initiative within the School of Pharmacy is the establishment of Center for Computer Aided Drug Design. This initiative has been developed by Alexander MacKerell, Ph.D. in collaboration with other School of Pharmacy researchers. Many diseases are caused by the improper regulation or mutation of enzymes within the cell. Drugs designed to inhibit (antagonists) or stimulate (agonists) these enzymes are often effective in preventing disease progression. In the past decade, the three-dimensional structure or shape of many enzymes that are known to be involved in the establishment of multiple disease states have been elucidated. With the help of computers, it has now become possible to "custom design" drugs that inhibit (or stimulate) these proteins. Enzymes are like any other machine. If you know how they work and how they are built, you can design "monkey wrenches" that will screw up the works. In other words, design inhibitors of the enzyme. The computer is able to determine the shape of a region of the enzyme that will result in its inhibition. Once the shape of the "monkey wrench" is determined the computer will automatically compare the shape to the structure of over one million compounds within a database (all of these compounds are commercially available). This methodology usually identifies approximately 20 or so compounds that have a shape that is capable of interacting with the enzyme and inhibiting its activity. This list of these compounds is then given to scientists who then evaluate the compounds for their potential as inhibitors. Once an inhibitor is found, chemists can optimize the drug for maximal effectiveness, bioavailability, etc. In the same way, this technique can be used to select compounds that stimulate an enzyme's activity. The power of this technique is that it affords School of Pharmacy and campus scientists with the same, if not better, methodology for the design of drugs than what is currently available within the pharmaceutical industry. Dr. MacKerell has already begun collaborations with scientists within the Schools of Pharmacy and Medicine. Since campus researchers study a multitude of clinically relevant molecules, the odds are excellent that our center will be intimately involved in the discovery of multiple new and potent drugs.

There are many other research initiatives within the School of Pharmacy and space limitations preclude me from telling you about all of them. However, I think that you can see that the School of Pharmacy is an exciting place to be for a number of reasons. Not the least of which is pharmaceutical science.

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...did you hear the one about the horse?...
Joe Marrocco and Marty Mintz

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CE Session

Gerry Herpel, Auctioneer prepares for the MPhA Foundation Auction

Cynthia Boyle is presented with the Outgoing Speakers of the House Service Award by Murhl Flowers

Murhl Flowers receives the Outgoing Presidents Award from Howard Schiff

Mark Sanford receives the Incoming Presidents Award from Murhl Flowers

Joe DeMino congratulates Mark Sanford, he now wears the Captains hat

Frank Radigan presents Murhl Flowers with the Merck Outgoing Presidents Award

Neil Leikach is presented with the Distinguished Young Pharmacist Award by John Newhouse of Pharmacists Mutual

Angelo Voxakis is the recipient of the 2001 Seidman Distinguished Achievement Award

Delegate Don Elliott received the Bowl of Hygeia Award

Marty Mintz was presented the Innovative Practice Award sponsored by DuPont Pharmaceuticals

The 2001-2002 Honorary President is Dave Miller formerly MPhA's Executive Director and now Director of Pharmacy Relations with Merck.

Rx AND THE LAW

By Kenneth R. Baker, B.S.Pharm., J.D.

This series, **Pharmacy and the Law**, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

DO WE HAVE A PROBLEM?

California, Texas and Florida, three of our most populous states, have each passed regulations or statutes that require a quality assurance program for each hospital and community pharmacy in their states. While each of these states approach their solution to medication errors slightly differently, they share two basic premises – (1) a mandate that the pharmacy have a plan to reduce pharmacy errors and (2) that failure to do so can result in a penalty. For most of the pharmacies in these states the deadline is the end of 2001. Other states, such as West Virginia, are joining in the move to regulate quality. That which has been discussed in pharmacy circles over the last few years as "a good idea" is becoming a legal necessity.

But, why? Does pharmacy really commit enough medication errors to require us to formally put a quality program in our pharmacies? Let's test our knowledge. Answer the following questions and then let us decide: Do we have a problem?

1. First, let us begin with a common understanding of the question: What is an error?
   Answer: ________________________.
2. The book entitled *"To Err is Human — Building a Better Health System"* was a report on the larger problem of medical errors and adverse medical events by the Institute of Medicine. To whom was the report made and when was it published?
   Answer: ________________________.
3. According to the IOM report preventable adverse events are a leading cause of death in the US. How many hospital patients die each year in the US from medical errors?
   Answer: ________________________.
4. Turning to medication errors, how many deaths are caused each year due to medication errors?
   Answer: ________________________.
5. What is the rate (percentage) of major prescription errors in the average ambulatory pharmacy?
   Answer: __________ %.
6. How many prescriptions are filled annually in community pharmacies in the United States?
   Answer: ________________________.
7. If a pharmacy filled 1000 Rx per week and had an error rate of 0.1%, how many errors would that pharmacy have in one year?
   Answer: _______________.
8. Estimate how many errors your pharmacy has in an average week.
   Answer: _________________.

How did we do on our quiz? See if your answers agree with mine.

1. **What is an error? Answer**: There are many definitions for an error, but the one I have found most useful in pharmacy is: An error is any failure of quality that reaches the patient. There are two keys in this

definition. First, an error includes any deviation from what should have happened. This may be filling the prescription with the wrong drug, what we call a mechanical error, to an intellectual error such as failing to properly counsel or failing to detect a potential allergic reaction.

2. **To whom was the Institute of Medicine report made and when was it published? Answer**: The Institute of Medicine report, entitled "To Err is Human" was published in December 1999 as a report to the United States Congress. The publication caused both federal and state governments to examine the need for legislation.

3. **How many hospital patients die each year in the US from medical errors? Answer:** The IOM reported that 44,000 to 98,000 deaths are caused each year by preventable adverse medical events. This makes these preventable deaths one of the leading causes of death in the US. This is more than breast cancer, aids or even automobile accidents. [It is important to note that the question is actually wrong because it says "medical errors". Medical errors are included in preventable adverse medical events, but not all medical events are errors. Be aware, you will usually hear it stated in this incorrect manner. Either way, the answer is sobering.]

4. **How many deaths are caused each year due to medication errors? Answer:** According to a 1993 study cited by the report, medication errors, including those caused by pharmacy staff, nursing staff, medical staff and patients themselves, cause 7000 deaths per year. While these are not all pharmacy, too many are.

5. **What is the rate (percentage) of major prescription errors in the average ambulatory pharmacy? Answer**: While estimates range from ½% to 4%, the study I consider best that published in the Journal of the ASHP in November 1994. That study reported the figure at 1.8%. These were "major errors" which could have resulted in harm to the patient if not detected. Many of these errors are actually "near misses", caught before they reach the patient. The best estimate of the number of these that reach the patient, based upon preliminary figures from an ongoing study by PMC Quality Commitment, Inc., is approximately 25% of mistakes made. Assuming both estimates are correct, the number of errors would be 0.4%, or 4 of every 1000 prescriptions. Absent some ongoing study, most of these are probably never detected. Whichever number we choose, it is alarming.

6. **How many prescriptions are filled annually in community pharmacies in the United States?** Answer: Over three BILLION.

7. **If a pharmacy filled 1000 Rx per week and had an error rate of 0.1%, how many errors would that pharmacy have a year?** Answer: 52. However, no pharmacy is that good.

8. **Estimate how many errors your pharmacy has in an average week. Answer**: In order to make a good estimate, you should ask all pharmacists and technicians to keep track of errors and near misses for one week. Count the number of ones that actually get to the patient, and those that are caught, but could have reached

a patient. The number will probably alarm you.

No pharmacist or pharmacy technician wants to make an error. All humans, however make mistakes. There is no reason to believe that pharmacists or technicians are less prone to human error than doctors or nurses or lawyers or any other professionals. We should not wait for legislators to force us to develop and implement quality assurance programs for pharmacy. Proven programs, such as Pharmacy Quality Commitment, exist now.

Two final questions: (a) Disregarding the cost of hiring a lawyer and paying a claim, what would be the cost, in money, time and reputation, to your pharmacy of an error that reached one of your patients? (b) What are we waiting for?

©Kenneth R. Baker is Vice President, General Counsel at Pharmacists Mutual Insurance Company.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with policies and procedures of their employers and insurance companies, and act accordingly.

Pill Tiles

This is one of several fund raising efforts by the Maryland Pharmacists Association Foundation to refurbish the Kelly Memorial Building.

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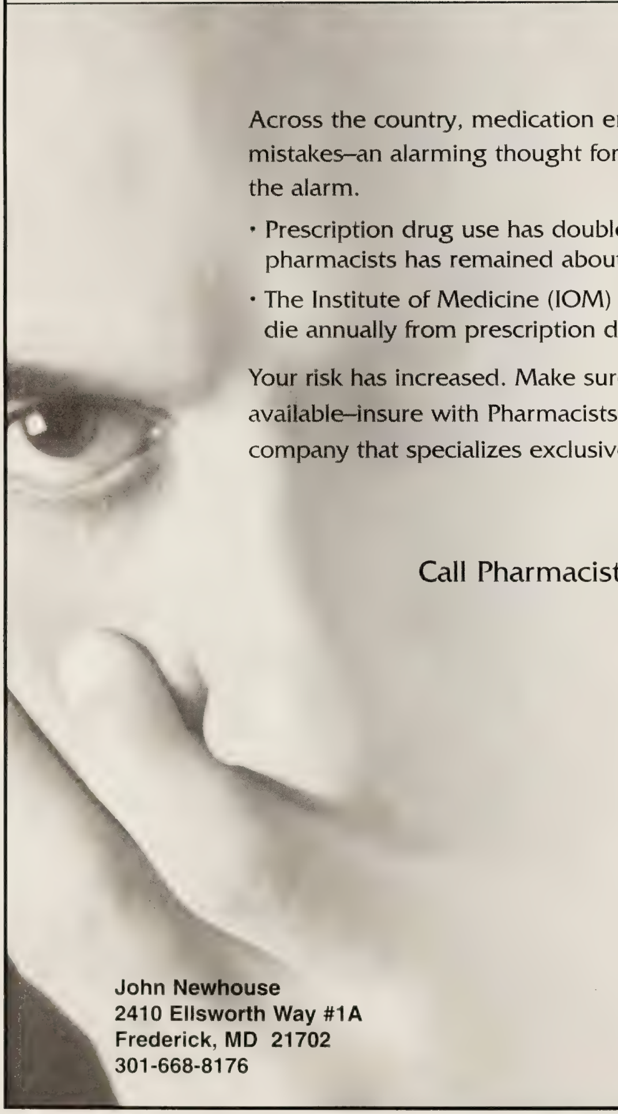

The Impact of Collaborative Drug Therapy Management on Patients with Uncontrolled Hypertension in a Veterans Affairs Medical Center

Louis R. Flowers, B.S., Pharm.D.
UMB Ph.D. Student

ABSTRACT

The authority to prescribe medications was once a privilege reserved only for physicians and, in limited scope, for dentists, optometrists, and podiatrists. In April 2000, a pharmacist assigned to a primary care clinic at the Veterans Affairs (VA) Medical Center in Baltimore Maryland joined nurse practitioners and physician assistants in acquiring this authority. The information in this document will discuss this authority and its benefit to patient care. The objectives of this document are to: 1) discuss the prescribing process; 2) explain the implementation of a clinical pharmacy specialist position in a VA Primary Care Clinic; and 3) document the impact of collaborative drug therapy management on blood pressure control.

Physicians, pharmacists, and the medication-prescribing process

Traditionally, physicians and pharmacists have had distinct roles within the medication-prescribing process. Physicians have had the authority to initiate a variety of medication regimens, order laboratory tests, and conduct or supervise procedures consistent with the patient's diagnosis. Conversely, pharmacists have acted retrospectively, i.e., after the prescription has been written. For the most part, collaboration with physicians involved making multiple telephone calls alerting physicians to therapeutic duplication, potential drug interactions, drug-disease contraindications, incorrect drug dosage or duration of treatment, drug-allergy interactions, and clinical abuse or misuse.

The medication-prescribing process has evolved into selecting drug therapies from a plethora of new and expensive medications that have both significant and subtle differences in action, adverse effects, interactions, efficacy, and cost-effectiveness. Furthermore, the advent of collaborative drug therapy management between physicians and pharmacists has caused the two professions to share responsibility in enhancing the rational and cost-effective use of medications in patient care.

Veterans Affairs and Clinical Pharmacy Specialists

In March 1995, the Department of Veterans Affairs issued general guidelines for establishing medication-prescribing authority for a Clinical Pharmacy Specialist (CPS). A CPS is a Pharm.D. graduate who has completed an accredited residency, specialty board certification, or is a pharmacist with equivalent experience. In April 2000, the VA Medical Center in Baltimore, Maryland, in an attempt to improve patient outcomes and contain cost, adopted these guidelines and prepared a scope of practice for a CPS. According to the scope of practice, the CPS works in the Primary Care Clinic as a "Provider" for patients with uncontrolled hypertension. Under collaborative drug therapy management, physicians evaluate and refer their patients with uncontrolled hypertension to the CPS for management. When physicians refer their patients to the CPS for the evaluation and treatment of uncontrolled hypertension, the CPS becomes the primary care provider (Figure 1). The CPS is assigned to the clinic Monday through Friday for twelve 30-minute appointments per day. The CPS obtains pertinent past medical history, medication history, chief complaint, history of present illness, and social history. Furthermore, the CPS may perform a physical examination and order diagnostic tests in the management of hypertension.

OBSERVATION

To assess the impact of collaborative drug therapy management, the investigator, a Ph.D. student, observed the CPS two days per week for a 2-week period. It was observed that when making an alteration in the patients' medication regimen, the CPS systematically monitored and identified the following:

Therapeutic duplication
Overutilization or underutilization
Drug-disease contraindications
Drug-drug interactions
Incorrect dosage or duration of treatment
Drug-allergy interactions
Clinical abuse or misuse

Furthermore, an interactive approach was used during the patient medication consultation. For example, the CPS asked open-ended questions that helped keep the patient actively involved in the consultation process.

In order to evaluate the blood pressure results, the investigator performed a retrospective medical record review. Twenty-three patients were pulled from the CPS's and a physician's May-June patient appointment list. The clinical pharmacy specialist cared for 11 patients and the physician cared for 12 patients. Patients were selected if they had a diagnosis of hypertension documented on their medical record and had their first appointment at least three months before June 01. Blood pressure readings of patients who received care from a physician only (non-intervention group) were compared with the blood pressure readings of patients who received care from a physician and CPS (intervention group).

Over an average follow-up of 4 months, a significant decrease in mean blood pressure was noted for the intervention group. From baseline to final assessment in the intervention group, mean systolic blood pressure (SBP) was reduced from 161 to 134 mm Hg ($p < 0.001$) and mean diastolic blood pressure (DBP) was reduced from 80 to 65 mm Hg ($p < 0.001$). There was no significant change in mean blood pressures for the non-intervention group (Table 1).

DISCUSSION

This study serves as a pilot project to suggest that a clinical pharmacy specialist working collaboratively with physicians could make a contribution in improving blood pressure in patients with uncontrolled hypertension. However, there are several limitations in this study. The prescribing pharmacists and the physicians are not necessarily typical of all pharmacists and physicians. The total number of practitioners and patients in the study are small and patients were not randomly assigned to the two groups. The short duration of the study and the fact that the intervention group's baseline SBP was significantly higher than the non-intervention group's baseline SBP reduced the validity of the results. Furthermore, since the patients who were followed by a physician only were not identified for intervention, one would not expect to see a decrease in blood pressure in the non-intervention group. With these limitations, the results cannot easily be generalized to other pharmacists or other health care settings. Additional studies in expanded primary care populations are required to evaluate the impact of a clinical pharmacy specialist in the management of hypertension.

Acknowledgment: The author wishes to acknowledge Dr. Brian Martin, Clinical Assistant Professor at the University of Maryland School of Pharmacy, for his assistance with the collection of the data to write this article.

Figure 1

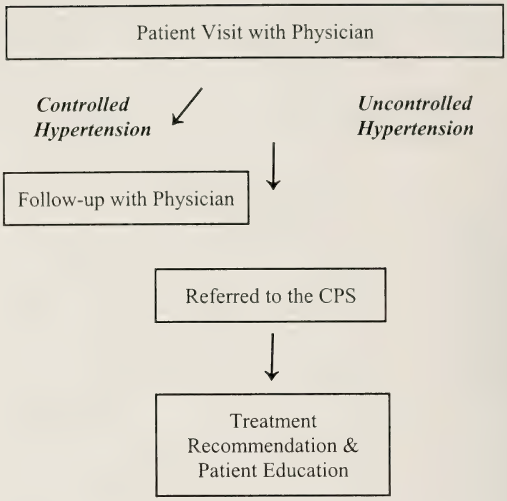
Patient Visit with Physician
Controlled Hypertension
Uncontrolled Hypertension
Follow-up with Physician
Referred to the CPS
Treatment Recommendation & Patient Education

Table 1

Intervention Group			
Physican & Pharmacist (n=11)	Baseline	Final	P-values
Mean SBP (SD)—mm Hg	161 (11.77)	134 (4.67)	<0.001
Mean DBP (SD)—mm Hg	80 (9.31)	65 (8.99)	<0.001

Non-Intervention Group			
Physician only (n=11)	Baseline	Final	P-values
Mean SBP (SD)—mm Hg	141 (21.59)	143 (24.57)	.0486
Mean DBP (SD)—mm Hg	75 (9.46)	73 (10.7)	.0296

SD - Standard Deviation
SBP - Systolic Blood Pressure
DBP - Diastolic Blood Pressure

Dispensing the Milk of Human Kindness

Something from the heart of Rogers Forge is missing. Dr. Doug Campbell has retired. Doug was the pharmacist at the Medicine Shoppe on York Road.

In reality, Doug was so much more. He was the "pastor" to a considerable flock of customers; a "medical consultant" to all who asked his opinion of homeopathic or herbal medicines; a "friend" to all who entered his store.

The Medicine Shoppe always felt like the old general store. It was a friendly place where, like Cheers, "everybody knows your name."

I write about Dr. Campbell not just as a tribute to him but as a symbol of what business can be. More successful businesses emphasize customer relations. Doug went a step beyond. Truth be told, I never felt like a customer. I always felt like a person, getting personal attention. The attention was on me, not on my wallet. The emphasis was on service, not on profit. The focus has on genuine caring, not the bottom line.

Our society has lost its soul because we have put a price on everything. The sense that our gifts, whatever they may be—pharmacist, clerk, mechanic, preacher, teacher, etc.—are given to us to be put at the service of others is largely forgotten.

The idea of vocation, that each of us is called by God to do whatever we do for God's glory, is largely a foreign concept. People like Doug teach us that capitalism and Christianity are indeed compatible. That we have a right to be paid for our services is absolutely correct. That the value of our services can only be measured financially is absolutely wrong.

Things of the Spirit have no economic price tag. How much do you pay for love, joy peace, caring and so on? The genius of Dr. Doug is that he saw not just the bottom line—required to make a living—but also the higher self required to make a life.

I think Doug honestly saw his service as a ministry to others. And he realized that healing was more than filling someone's prescription. Obviously he did that because of his appreciation of science and modern medicine.

But, Doug also knew that there were some things that modern medicine can't touch, and prescriptions can't cure. He knew that listening could fill an emptiness that a drug could not. He knew that taking time to notice people gave them a sense of well-being. They knew they were worth being noticed.

Modern medicine is quickly becoming a disaster. Insurance companies raise rates and cover less. Doctors are controlled in the time they can spend with patients and in the types of prescriptions they can write. Physician assistants and nurses are routinely over-worked and stressed to the point of burn-out. Everyone talks about these issues, and everyone feels powerless to make a difference.

But Doug Campbell showed that you can pay attention to the whole person—body, mind and spirit. We heal when we care about each other. We heal when we show respect to each other. We heal when we listen to each other.

I wish the new owners of the Medicine Shoppe well. May they catch something of Doug's spirit. May they and all pharmacists and health care personnel realize that they have the power to make others feel not just like customers but people. May they know that they have the power not just to dispense Milk of Magnesia but to dispense the milk of human kindness.

By Father Joseph Breighner

Touch of Faith, The Catholic Review, June 7, 2001

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Continuing Education for Pharmacists

Volume XVIII, No. 10

Patient Counseling: Treatment of Head Lice Infestations

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals: The goals of this lesson are to discuss the etiology, prevention, and treatment of head lice infestations. Information for counseling patients is emphasized.

Objectives: At the conclusion of this lesson, successful participants should be able to:
1. recognize the etiology and prevention of head lice infestations;
2. identify pediculicide drugs and select from a list their pharmacologic and toxicologic properties;
3. select specific adjunctive measures to maximize treatment of head lice infestations; and,
4. demonstrate an understanding of how to counsel patients on the prevention and treatment of head lice infestations.

Funding for this article was provided by an educational grant from

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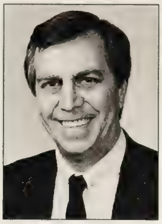

Wuest

Head lice is one of the most common medical problems of grade-school age children in the U.S. Head lice do not pose a serious health threat. They do not transmit disease. They can be a nuisance to the victim, disturbing to school personnel, and a source of humiliation to parents.

Head Lice Infestations

There are three varieties of lice that infest humans: *Pediculus humanus corporis* (body louse; "cooties"), *Phthirus pubis* (pubic or crab louse), and *Pediculus humanus capitis* (head louse). Body lice inhabit the seams of clothing and infest their human host only to feed. Body lice are not common in the U.S. Pubic lice infestations may be encountered through sexual contact.

Since lice are parasites that live on the body's surface, they are ectoparasites. An infestation of lice is termed *pediculosis*. A pediculicide is an agent that kills lice.

The precise incidence of head lice infestation is not known, since the reporting of pediculosis outbreaks is not mandatory. It is estimated that more than 10 million cases occur annually in the U.S. Health authorities report that the number of cases is increasing each year.

Outbreaks occur in significant numbers in August, increase significantly when schools reopen, and continue to increase with the onset of autumn. They occur in children at all grade levels in schools and wherever children assemble, and in sites of communal living. Incidences peak in elementary school and decrease as children grow older.

Head lice are transmitted indirectly from wearing clothing that has come in close contact with infested apparel on school coat racks. They are also spread by sharing combs and brushes used by children with lice infestations. Bed linens and head rests on chair and couch backs are other sources of indirect contact. Infestation may also be acquired by direct contact with the head of an infested person, commonly during play.

Head lice infestations occur more frequently in females, perhaps due to their willingness to share personal hair-grooming aids. Hair length is not an important criterion. Caucasians are infested more often than non-Caucasians, and persons in every country in the world are susceptible to infestation. There is no significant difference in incidence among persons of different socioeconomic classes. Personal hygiene is not an important contributing factor.

Differentiating Head from Pubic Lice. Both head and pubic lice appear as tiny yellow-brown, to dark-gray spots measuring approximately 1 to 4 mm in length, about the size of a sesame seed. Their physical features can not be distinguished by the unaided eye, but can be by viewing with a strong magnifying glass in good lighting.

Pubic lice appear distinctly different from head lice (Figure 1).

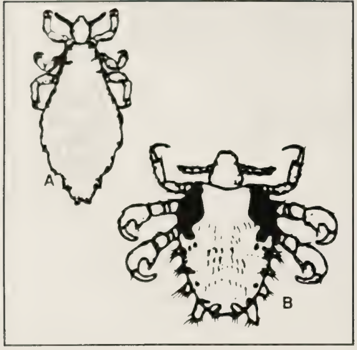

Figure 1. Head (A) and Pubic (B) lice. These insects can be readily recognized by their shapes. Head lice have an elongated abdomen and pubic lice have a shorter, rounded abdomen. Head lice have legs of the same length, pubic lice have two front legs that are smaller than the second and third pairs. Pubic lice, but not head lice, have lateral processes.

The site of infestation is the first consideration when distinguishing between the two. Pubic lice are normally confined to the genitalia and perianal areas. Head lice are found most commonly on the nape of the neck or behind the ears.

Head lice are elongated, flat insects with short legs and claws which grasp hair shafts for stability while feeding. Their cylindrical shape enables them to move freely among dense hair growth. Lice are wingless. They neither hop, jump, nor fly from one individual to another.

Lice depend solely upon human blood for their nutrition. They are *hematophagous* (blood-sucking) insects, equipped with mouthparts for piercing skin and sucking blood. Their saliva contains an anticoagulant that is introduced under the skin of the infested host during feeding. This prolongs their feeding period; lice may remain attached to the same site for several days while they continue to feed. Head lice become engorged with blood; pubic lice seldom do. When so engorged, head lice may appear reddish-brown in color.

A reddish (erythematous) papule (small, raised and hard area) may begin to appear within hours of a bite. The area may also appear to be hemorrhagic, caused by the anticoagulant injected at the time of biting. These papules often itch insatiably and, as a result of vigorous scratching, secondary bacterial infection may follow. A pustular eczema (dermatitis) may develop later.

Lice Eggs ("Nits")

These are small, globoid (i.e., shaped like a chicken egg) or oval protrusions that measure about the size of the period at the end of this sentence. Nits appear as yellow or white spots that are attached to hair shafts, touching or close to the skin. Nits are bonded firmly onto the hair shaft by a sticky secretion from the female insect. This "cement-like" substance is strong enough to protect nits from being dislodged from the hair by ordinary washing.

Hatching within seven to 10 days, the voracious nymphs must feed upon a human host within 24 hours to survive. Nymphs will molt three times over the following two weeks as they transform into mature adults.

Following mating, adult male lice die quickly. Each female louse will produce approximately 300 eggs over her 35-day life span. It has been reported that the head of an infested individual usually contains about 10 adult lice at any one time.

Treatment of Lice Infestations

The two goals of treatment are to kill the insects and their nits, and control symptoms of infestation. Itching is the cardinal symptom and may be unrelenting. Secondary infection is the other concern.

Itching occurs in response to histamine and other inflammatory substances including the proteinaceous salivary secretion released following the insect's bite. It may persist a week or longer, even after the causative organisms have been eradicated. Following destruction of the insect, sufficient time is required for the host's body to eliminate these irritating substances and for localized inflammation to subside.

An OTC antipruritic cream containing an antihistamine, local anesthetic or hydrocortisone may be applied topically and is usually sufficient to control the itching. Severe itching may require stronger therapy, or use of systemic antipruritic medication.

If lice are not treated, vigorous and continuous scratching may lead to secondary bacterial or fungal infection. Impetigo and furunculosis (appearance of boils) may be outcomes, appearing at the nape of the neck and upper portion of the back. When infection does occur, the victim's general health suffers.

Treatment of secondary infections includes application of an appropriate triple-antibiotic or antifungal cream or ointment. Infections that fail to heal within seven days, or worsen, should be evaluated by a physician. Treatment of these patients may require systemic anti-infectives.

Pediculicides

Pyrethrum Extract. Pyrethrum extract (0.17 to 0.33 percent) in combination with piperonyl butoxide (2 to 4 percent) is the most commonly used ingredient combination for self-treatment of head lice. Pyrethrum extract (formerly termed pyrethrins) is a rapidly acting insecticide that kills insects by disrupting ion transport mechanisms at their nerve membranes. Affected insects experience convulsions, paralysis, and death.

Not directly insecticidal, piperonyl butoxide is included in pyrethrum extract mixtures because it potentiates the insecticide's action. By suppressing the insect's oxidative degradation mechanisms, piperonyl butoxide inhibits its ability to detoxify the active insecticide. The combination of ingredients is, therefore, synergistic. The contact time with pyrethrum extract is prolonged, and kill rate increased.

Commercial preparations of

Table 1
Representative Pediculicides

Ingredient(s) / Dosage Forms	Products*	Rx Status
Lindane Lotion 1%	G-Well, generics	Rx
Lindane Shampoo 1%	G-Well, generics	Rx
Malathion Lotion 0.5%	Ovide	Rx
Permethrin Cream 5%	Acticin, Elimite	Rx
Permethrin Liquid Rinse 1%	Nix	OTC
Pyrethrum Extract + Piperonyl Butoxide		
Liquid	Barc, Endlice, Pyrinyl II, Tisit, Triple X, generics	OTC
Gel	InnoGel Plus, Tisit Blue, generics	OTC
Shampoo	A-200, Clear Total, Lice-Enz, Pronto, Pyrinex, Pyrinyl Plus, R & C, RID, Tisit, generics	OTC
Shampoo/Conditioner	Tegrin-LT	OTC

**different products contain different strengths*

pyrethrum extract consist of a mixture of substances obtained from flowers of the plant *Chrysanthemum cinerariaefolium*. This mixture contains substances identified as esters of chrysanthemic acid and pyrethric acid, and three alcohols.

Products (Table 1) containing pyrethrum extract are safe for human use. They should be applied to dry hair and scalp, and allowed to remain for the specified period before washing with soap and water or regular shampoo. Application should be repeated in seven to 10 days to kill newly hatched eggs.

Pyrethrum extract and piperonyl butoxide are not absorbed appreciably following topical application. Small quantities that may enter the blood will be metabolized rapidly. The estimated fatal oral dose of pyrethrum extract for humans is 0.7 g/kg, and for piperonyl butoxide, 11 g/kg.

Adverse effects are rare when products are used as directed, with contact dermatitis the most frequently reported affliction. Since pyrethrum extract is obtained from natural plant origin, allergic rhinitis and asthma attacks may be precipitated in susceptible individuals. Inhaled pyrethrum extract may cause nausea and vomiting, and on rare occasion, muscle paralysis and death.

Most reports of clinical toxicity with products containing synergized pyrethrum extract relate to solvents, typically petroleum distillates, in the preparation. Ingestion by a child of one teaspoonful of product could be fatal.

Permethrin. A synthetic pyrethroid, permethrin is believed to act by the same mechanism of action as pyrethrum extract. Permethrin-rinse products should be applied in the same manner as pyrethrum extract shampoos. Permethrin is the only pediculicide approved for prophylaxis, when at least 20 percent of the population within an institution are infested, or for immediate household members of infested individuals.

Permethrin has a low toxicity in mammals since it is absorbed poorly, and inactivated rapidly by ester hydrolysis. Like pyrethrum extract, permethrin is contraindicated in persons hypersensitive to chrysanthemums or synthetic pyrethroid.

A single treatment is both insecticidal and ovicidal. Permethrin is retained in hair shafts for up to 14 days regardless of the nature of shampoos, other drugs, or cosmetics that may be applied to the hair.

Adverse effects include temporary itching, burning, stinging, numbness and pain, but these are rare. Permethrin should not be used on infants because of the greater permeability of their skin, and their reduced ability to metabolize it.

Lindane. Lindane (gamma benzene hexachloride) is absorbed rapidly across the hardshell of insects. It interferes with ionic exchange through the insects, cell membranes and, therefore, can cause seizures and death.

About 10 percent of topically applied lindane is absorbed. Lindane concentrates in adipose tissue and the brain. Small amounts may persist in the brain for up to two weeks following topical use.

Lindane is reported to cause CNS stimulation, nausea and vomiting, lethargy, disorientation, restlessness, and convulsions. Toxic symptoms are often the result of misuse of the product. The fatal dose in humans is approximately 28 g (400 mg/kg).

Malathion. Marketing of a previous formulation of malathion was discontinued because of poor patient acceptance. The product contained a high concentration of isopropyl alcohol. Thus, it was flammable and subject to potentially serious safety issues. Malathion (0.5 percent in isopropyl alcohol) has been reintroduced to the market for use on children six years of age and older. The product requires a prescription.

This pediculicide is an organophosphate insecticide. It is toxic within three seconds of application to both lice and their eggs. Human toxicity is minimal when the product is used as directed because absorbed malathion is detoxified rapidly. The lethal dose in humans is reported to be greater than 1 g/kg; less than 10 percent of drug applied to the skin is absorbed.

Resistance to Pediculicides. Reports of lice resistance to pediculicide products are mostly anecdotal to date. This is one of the most controversial topics dealing with the therapeutics of controlling lice infestations.

Table 2
Adjunctive Measures to Control Lice Infestations

- *Washable Clothing.* Machine wash in hot water, dry in the hot cycle for at least 20 minutes or press with a hot iron.
- *Non-washable Clothing.* Dry clean or seal in a plastic bag for three weeks.
- *Personal Grooming Articles.* Soak combs, brushes, etc. in hot water for five minutes, or in water containing an antiseptic or a pediculicide product for one to two hours.
- *Carpets and Stuffed Furniture.* Vacuum thoroughly or spray with an OTC pediculicide product.
- Avoid close contact with other persons until your doctor or pharmacist advises you that all lice and nits are gone.
- Avoid sharing combs, hair brushes, clothing, and other personal items.
- Check children's hair regularly in a bright light for lice or nits.

Mechanical Removal. Lice and nits can be removed manually with a fine-tooth (or special precision) comb. They can also be picked off, one by one, using fingers or tweezers. Formerly, it was recommended that the hair be back-combed because of the angle of the attached nit in relation to the hair shaft. With the newer combs, it is recommended that the hair be combed from the scalp outward.

Interest in treating head lice infestation by removing them solely with combing has increased, in part, due to the emerging fear that lice are becoming resistant to chemical pediculicides. Also, the potential for toxicity when chemical pediculicides are misused helped popularize the use of these combs. Modern fine-tooth combs are constructed to remove both lice and nits effectively.

Counseling Patients on the Treatment of Head Lice Infestations

Pediculicidal products may cause irritation to the eyes and mucous membranes. They should not be used near these areas. Lice infestations on eyebrows and eyelids may be treated safely by applying a thin layer of petrolatum and rubbing it in well. It kills lice by mechanically blocking the insects' respiration.

The affected person should be observed closely for the presence of nits for eight to 10 days after initial drug application. Persons with lice or nit infestations that remain after two treatments should be evaluated by a physician to determine the source of infestation or reason for treatment failures. Patients should be advised to not confuse hair spray globules, dandruff or other extraneous debris with nits. The former are easily dislodged and brushed away. Nits remain attached firmly, as explained earlier.

Because of persistent itching, patients may wish to apply a pediculicide product more often than directed. This subjects the patient to increased risk of adverse effects, including excessive drying of the skin which, in turn, can incite further itching.

Since lice infestations are highly communicable, whenever one individual in a family has head lice, other family members (including adults) should be examined carefully to determine if lice or nits are present. They should also receive treatment if infested. All personal items, and areas of the home which may have been contaminated, must be decontaminated if treatment is to be completely effective. Table 2 lists adjunctive measures to control lice infestations.

The social stigma that accompanies head lice infestation has increased interest in home remedies and other non-approved treatments for self-application. For example, it has been stated that the skin can be heated with a hair drier until it tingles, or soaked in hot (not scalding) water for three minutes. While both procedures may kill some lice and nits, they can be uncomfortable and damaging to the skin. They are not likely to be effective for eradicating all insects and eggs. Other "remedies" such as gasoline, kerosene, sulfur, larkspur lotion, garden insecticides and dog lice/flea shampoos are all dangerous and must not be used.

Table 3
Counseling Advice for Pediculicide Products

- Use this medicine exactly as directed. Do not apply extra doses, or use it more often or for longer periods than your doctor or pharmacist recommends.
- If this product does not come with a fine-tooth comb for mechanically removing nits, ask your pharmacist to recommend one. Use the comb exactly as directed.
- Do not apply this product to damaged skin, mucous membranes, eyelids or eyelashes unless a doctor advises otherwise.
- Call your doctor or pharmacist right away if this medicine causes itching, rash, or any other adverse reaction.
- Keep this medicine out of the reach of children. If a child accidentally swallows some of it, call your doctor right away.

Shaving the area is an effective means to remove all insects and their nits. Routine shaving is no longer advocated since pediculicides and/or insect removal by combing are effective when used properly.

Table 3 provides information that may be provided to persons when counseling on head lice and the use of pediculicide products. A source of patient information is the National Pediculosis Association. This group is active in lice prevention education and supplies material that can help parents deal with the condition. The association can be reached at www.headlice.org.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Treatment of Head Lice Infestations." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 10/15/03. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-00-002-H01.

The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

Name____

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1. An individual with "cooties" is infested with:
   a. body lice. c. head lice.
   b. crab lice. d. pubic lice.

2. Which of the following is the most significant factor in the incidence of head lice infestation?
   a. Hair length
   b. Female gender
   c. Personal hygiene
   d. Socioeconomic class

3. Which of the following statements is true?
   a. Head lice can hop from a toilet seat to a person.
   b. Head lice have wings and can fly from person to person.
   c. Head lice are round and fat with eight legs.
   d. Head lice have claws to grasp hair shafts.

4. Lice depend solely on which of the following for their nutrition?
   a. Microorganisms
   b. Keratin
   c. Blood
   d. Sebum

5. Which of the following statements is true?
   a. Nymphs molt three times before becoming a mature adult.
   b. Nits attach to hair follicles with their mouths.
   c. Nymphs must begin feeding on the host within 10 hours.
   d. Nits hatch within 24 hours of being laid.

6. Pyrethrum extract kills head lice by:
   a. damaging DNA formation.
   b. disrupting ion transport.
   c. interfering with enzyme activity.
   d. inhibiting protein synthesis.

7. After the initial application of pyrethrum extract, the application should be repeated in:
   a. 12 to 24 hours.
   b. 2 to 5 days.
   c. 7 to 10 days.
   d. 3 to 4 weeks.

8. Permethrin is contraindicated in persons allergic to:
   a. roses. c. philodendrons.
   b. daisies. d. chrysanthemums.

9. The safest therapy for lice infestations of the eyebrows and eyelids is:
   a. kerosene. c. malathion.
   b. larkspur. d. petrolatum.

10. Which of the following is recommended for handling non-washable clothing to control lice infestations?
   a. Seal them in a plastic bag for three weeks.
   b. Spray them with starch before washing them.
   c. Sprinkle them with RID and hang them in a closet.
   d. Vacuum them thoroughly twice a week for a month.

Pharm/alert® Notes

Counseling Notes for Pharmacists

Diabetes and Kidney Function

The kidneys filter about 200 quarts of blood a day, removing waste products from the circulatory system and rerouting them to the urinary system. High levels of glucose in the blood stress and eventually weaken and destroy the nephrons in the kidneys (diabetic nephropathy). The damage is irreversible and the process slow and insidious. Symptoms may not appear until renal function has decreased to 20% and renal failure is imminent.

Diabetes and hypertension are the two major risk factors for kidney damage. Chronic nephropathy afflicts more than 30% of Type I diabetics (who are more likely to suffer kidney failure) and about 10% of those with Type 2. The length of time a person has had diabetes influences the development of kidney disease, but genetics are also involved. Men are at 50% greater risk than women, and blacks have three to four times the risk of whites. Since most diabetics with kidney disease also have eye problems secondary to their diabetes, patients who present with renal impairment should have a complete eye examination.

Diabetics need to know that they can prevent or slow down kidney disease by maintaining tight glucose control. It is also important to keep blood pressure within normal limits through dietary means and by the use of antihypertensives if necessary. ACE inhibitors have been found to retard kidney disease even in normotensive diabetics. When small amounts of protein are being leeched into the urine (microalbuminuria), an early sign of kidney damage, a medical prescribed low protein diet is sometimes effective.

Some over the counter medications, particularly NSAIDS, are nephrotoxic and should not be used regularly by diabetics.

People with diabetes understandably dread kidney failure, dialysis, and the possible need for transplant. They prefer not to think about it. Pharmacists can help by reminding their diabetic patients to have renal function monitored ever 6-12 months. A partial decrease in function is not a death sentence—since everyone knows a person can be quite healthy after having donated a kidney, it follows that 50% of renal function is adequate, if it remains constant. The more patients understand, the more intelligently they can act on their own behalf.

For more information, call the American Diabetes Association at 800-342-3483.

Send Inquires to:
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Pharmacist Licensure Examination

For the results of the Pharmacist Licensure examination visit the Maryland Board of Pharmacy's website at: www.dhmh.state.md.us/pharmacyboard/pharmlic/0600rost.htm. The results are updated every Friday.

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MPhA is looking for original works. If you are a member and have a paper or would like to write an article for an issue of the *Maryland Pharmacist* send your typewritten copy to MPhA, 650 W. Lombard Street, Baltimore, MD 21201-1572 or FAX to 410-727-2253. Please be sure to put your name and phone number on your piece. All copy is subject to approval and space availability.

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United We Stand

In the aftermath of the events of September 11th, the nation has united around the fight against terrorism. The citizens of the United States and allied countries have put aside political differences and differences in race, religion, ethnicity, and other personal beliefs. We have identified a common interest and united to accomplish our common goal.

Much like the citizens of the world, the pharmacists of Maryland have put aside differences in practice settings and association affiliations to unite and be heard. We have identified common interests and united to accomplish our common goals through the formation of the Maryland Pharmacy Coalition (MPC).

The purpose of the MPC is to provide a forum for discussion and understanding between Maryland's pharmacy associations on issues impacting on the practice of pharmacy and the public's health.

The formation of the MPC is a groundbreaking event for pharmacy in Maryland and will help unite the profession and strengthen the "Voice of Pharmacy". The MPC will stimulate collaborative efforts between the state pharmacy associations on key issues and promote the highest standard for pharmacy as we take a proactive approach to shaping the future of our profession.

The MPC will serve as a united voice on common interests to Maryland pharmacists, Maryland pharmacy associations, and the people they serve. Through the concept of "One Vision - One Voice", the MPC will enhance pharmacy's impact on legislative and regulatory issues, enhance pharmacy public relations programs, enhance health education initiatives to improve the public's health, and enhance intraprofessional and interprofessional relationships.

Mark Sanford, P.D., President

It is high time that Maryland Pharmacy come together with one voice for the profession regardless of practice setting. The MPhA, in collaboration with MSHP and MD-ASCP has done just that through the formation of the Maryland Pharmacy Coalition (MPC), officially founded September 18, 2001.

Together we will be successful. We will persevere to position pharmacy as a provider of a service and as an integral member of the healthcare team. We will stand united as one profession. We will not falter, we will not fail. We will shape the future of pharmacy together. We will rise to the challenge, take control of our destiny, and fight for what is right.

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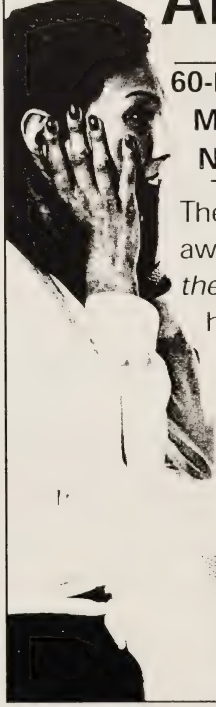

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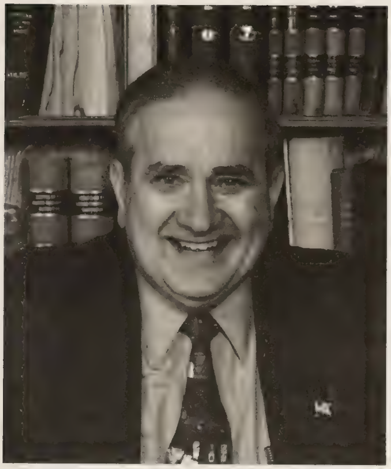

Medication Safety

Howard Schiff
Executive Director

Over the last couple of years, I have participated on several committees working on medical safety and/or medication errors. The common thread weaving through those efforts was a non-punitive approach to the problem, an effort to correct system errors rather than blame an individual practitioner. One of the first was the Board of Pharmacy Task Force on Medication Errors which consisted of a diverse group of pharmacy practitioners, everything from students to USP.

The recommendations of the Task Force fell into three categories; educational initiatives for consumers as well as pharmacists, a non-punitive response by the Board to errors reported, and a mandatory quality assurance program in the pharmacy. This last recommendation would require a record of errors made and actions taken to remedy. Here lies the problem. At the present time, pharmacies and pharmacists do not have discovery protection for this type of record. They are fair game for lawyers in any litigation. The Board will not proceed with full implementation until a discovery protection statute is enacted in order to give pharmacists peer review protection in arbitration or civil proceeding. There is precedent in that California and Texas have already addressed this issue.

One of the most difficult concepts on which to reach consensus was the definition of an error. The one accepted was The National Coordinating Council for Medication Error Reporting and Prevention's (NCCMERP) definition. It begins "A medication error is any preventable event that may cause or lead to inappropriate medication use . . . " Just using this part of the definition, if you store Merck's Plendil (R) and Prinivil (R) alphabetically on the shelf and, because their containers look so much alike, you pick up the wrong one, you have just committed an error although nothing has even reached the counter yet let alone the patient. A systems approach would advocate some method of drug identification to reinforce the identity of each medication.

In the real world, however, reinforcement of drug identity is a minute part of the answer. A busy community pharmacy is a noisy workplace with telephones ringing, consumer requests, computers and modems buzzing, often compressors going off and on, and conversations interrupting concentration. A quality assurance record is just another piece of the program. Perhaps the most important factor is the health system itself. In this age of managed care, payments for services and reimbursements are reduced. However, all private and public organizations, in order to be viable, must show a profit; income must be greater than expenses. The largest expense is always payroll and, thus, the most obvious item to reduce. A pharmacist, as well as a nurse or a physician, often must work without enough tech or other help. Will he or she be singled out for punishment because of an error due to overload? Surely if they bypassed safeguards in a system. What about the factor of exhaustion? Does not the real fault lie in a health care system in which providers have unacceptable burdens?

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The Emergency Treatment of Alprostadil-Induced Priapism

Adverse Drug Reaction

Austin C. Ladic
Pharm.D. Candidate
University of Maryland

While on rotation at Memorial Hospital at Easton, the clinical pharmacist was called overnight for a consult on the treatment of priapism. A patient had presented to the emergency department with a history of painful erection secondary to use of intracavernous alprostadil. The physician wanted to use a pharmacological agent to achieve detumescence, and asked the clinical pharmacist on call for a recommendation on which agent to use and also whether the pharmacy was able to prepare the medication in the concentration necessary for the procedure.

Priapism is defined as a state of prolonged, painful erection of the penis that is not related to sexual stimulation.[1] The condition usually involves the paired corpora cavernosa, with the glans and corpora spongiosum remaining flaccid or mildly distended.[2] There are several etiologies for priapism including sickle cell crisis, leukemic crisis, injury (trauma to penis, perineal area, or spinal cord), prolonged sexual intercourse, and as a side effect of certain medications. The treatment of priapism depends on the etiology of the condition.

Priapism can be classified as high flow or low flow based on penile blood flow.[3] In a high flow state, there is increased arterial inflow and venous outflow from the penis resulting from perineal injury or the use of cocaine.[2] Tissue ischemia and pain is not normally experienced making this condition less emergent than low flow priapism. Low flow priapism is a urologic emergency. Penile venous outflow is decreased or blocked leading to ischemia, acidotic tissue, and pain. If untreated, this condition can lead to corporal fibrosis, infection, and erectile dysfunction. To avoid complications, treatment of low flow priapism should not be delayed. Widespread cellular damage can occur after 24 hours of this type of erection.[2]

Prior to initiating treatment, a complete history should be obtained from the patient with attention given to symptoms, current medications, comorbidities, and history of trauma. Penile pain is suggestive of low flow priapism, and a recent history of trauma, with the absence of penile pain, is suggestive of high flow priapism. The most important consideration is to achieve detumescence as early as possible and to not delay treatment. First, corporal blood should be aspirated and blood gas analysis performed to confirm the presence of high or low flow conditions.[3] The presence of ischemia will guide the treatment.

If ischemia is found, sickle cell disease should be ruled out as the etiology. For non-sickle cell induced, low flow priapism, the use of terbutaline, although subject to debate, has been advocated as the first step of treatment prior to the patient presenting to the emergency department.[4] A suggested dose is 0.25-0.5 mg given subcutaneously in the deltoid muscle area or thigh.[5,6] Alternatively, the use of oral terbutaline 5 mg has been suggested as a possible initial treatment.[7,8] However, it has been argued that the majority of the patients in the oral terbutaline trial did not achieve detumescence and ultimately required further treatment.[9] The mechanism of action of terbutaline in the treatment of priapism is not completely known; however, it is thought to work through stimulation of beta$_2$ receptors resulting in a generalized relaxation of smooth muscle in the vasculature, sinusoids, and other local structures.[6] Based on the literature, there is not sufficient evidence to advocate or discourage the use of terbutaline as an empiric therapy.[2] However, the failure of terbutaline only delays more aggressive treatment.

The next step of therapy should be the intracavernous injection of an alpha-adrenergic agent. Most authorities consider this the standard of care.[2] Alpha-adrenergic agents such as epinephrine, norepinephrine, phenylephrine, metaraminol, and ephedrine all have utility when dosed by intracavernous injection. However, extreme caution is warranted, and continuous monitoring of blood pressure and pulse should be performed.[10] Of these agents, phenylephrine has been suggested as the best choice since it has potent and selective alpha$_1$-adrenergic stimulatory properties that can decrease arteriolar flow to the cavernous sinusoids without a beta$_1$ stimulatory effect.[11] Two deaths have been reported from the intracavernous use of metaraminol, presumably due to lack of monitoring and supportive care.[12] Based on this, metaraminol should be avoided. Extra caution is necessary in patients with coronary heart disease, hypertension, cerebral ischemia, or those taking antidepressant medications. Guidelines for the preparation of the aforementioned alpha-adrenergic agents have been published.[13] One suggested dosage regimen is the intracorporeal injection of phenylephrine using 0.1ml/min of 500mcg/mL solution up to a total infused dose of 1mg of phenylephrine.[2] When alpha-adrenergic agents are used within six hours of erection, they usually produce detumescence on their own. If more than six hours has elapsed prior to treatment, intracorporeal aspiration should be used in conjunction with intracorporeal injection of alpha-adrenergic agents.[14] Alternatively, penile aspiration of blood can be attempted to produce detumescence prior to use of alpha-adrenergic medications.[5] Both penile aspiration and the use of pharmacological modalities have been documented in the literature as efficacious. If detumescence is still not achieved, surgical shunting methods should be considered.[2]

In the case presented, the clinical pharmacist recommended using 0.25 mg of terbutaline subcutaneously. The pharmacy never received any follow-up on the case and it is unknown whether the detumescence was achieved with a single dose of terbutaline or whether other agents were eventually needed. In this situation, I would have recommended initiating treatment with an alpha-adrenergic agonist barring any contraindications. Based on my search of the literature, it seems that there is not enough evidence to suggest that the efficacy of terbutaline should warrant first-line status; whereas alpha-adrenergic agonists have been reported in the literature as being over 90% effective.

Naranjo Adverse Drug Reaction Scale

1. Are there previous conclusive reports of this reaction? *Yes+1*
2. Did the adverse effect appear after the suspected drug was administered? *Yes+2*
3. Did the adverse reaction improve when the drug was discontinued or a specific antagonist was given? *Unknown+0*
4. Did the adverse reaction reappear when the drug was readministered? *Unknown+0*
5. Are there alternative causes (other than the drug) that on their own, caused the reaction? *No+2*
6. Did the reaction occur when a placebo was given? *Unknown+0*
7. Was the drug detected in the blood (or other fluid) in a toxic concentration? *Unknown+0*
8. Was the reaction more severe when the dose was increased or less severe when decreased? *Unknown+0*
9. Did the patient have a similar reaction to the same or similar drug(s) in a previous exposure? *Unknown+0*
10. Was the adverse event confirmed by other objective evidence? *Unknown+0*

TOTAL=5

Probable Reaction (Total Between 5-8)

References:

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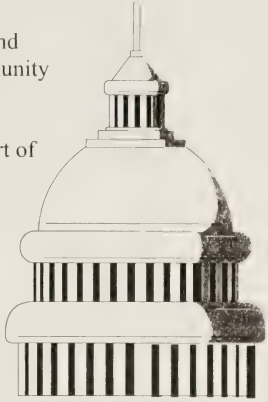
Legislative Update

The Joint Committee on Health Care Delivery and Financing, chaired by Senator Hollinger and Delegate Goldwater at a hearing on November 27, received a briefing from the Department of Health and Mental Hygiene (DHMH) on the Senior Drug Relief Act implementation, HealthChoice evaluation, and Medicaid Home and Community Based Service Waivers.



The MedBank Program, part of the Senior Drug Relief Act and administered by the Maryland Health Care Foundation, assists uninsured individuals to apply for free prescription drugs through manufacturer patient assistance programs. The program has regional offices throughout the state and has served 5,705 in 2001 (3,189 since 7/1). The program received a $2.5 million grant, part of which is used to purchase interim medications while enrollees wait to receive the free drugs from the manufacturer programs.

The Maryland Pharmacy Discount Program, also part of the Senior Drug Relief Act, required the State to apply for a "Vermont" style waiver to operate within the Maryland Medical Assistance Program. The waiver would allow eligible seniors to purchase prescriptions at the Medicaid price plus a $1 processing fee. Manufacturer discounts would be passed on to the patient and the pharmacy reimbursed. The waiver has not yet been approved by CMS (formerly HCFA). Reportedly, in Vermont, the waiver has been struck down because there is no contribution by the state to the program. If that logic is followed in Maryland the only part of the waiver that would be approved is the part that applies to those persons below 175% of federal poverty level for whom the State pays 35% of prescription costs. If the waiver is not approved, the program would operate within the Maryland Pharmacy Assistance Program which is completely state funded. Enrollment is scheduled to start January 1, 2002.

The Medicaid Home and Community Based Service Waivers allow care at home rather than in an institution. The program is beset by administrative delays and eligibility problems regarding both providers and recipients. Drug regimen reviews have been expensive and not thorough. Most often they are not being done by pharmacists and present one of the many problems with which DHMH must deal.

The Short-Term Prescription Drug Subsidy Plan, through CareFirst BlueCross BlueShield, offers seniors on Medicare with incomes up to nearly $26,000 ($35,000 for a couple) prescription coverage for a $10 per month premium. There are out-of-pocket copays and enrollees can receive up to $1000 in prescription drug benefits. They will receive the discounted BlueCross price after that limit has been reached. This program, designed to serve 30,000, is nearly full at approximately 26,000 enrollees. The program became effective July 1, 2001. At the briefing, CareFirst personnel publicly thanked pharmacies and pharmacists for their aid in enrolling seniors.

The HealthChoice evaluations were also presented to the committee by DHMH. Although anecdotally, neither recipients nor providers appear happy, DHMH presented a rosy view of the program that replaced the bulk of the Medicaid program. DHMH's statistics show increased coverage and access. The pharmacy focus group had pinpointed several major problems dealing with eligibility, formularies, provider identification numbers and preauthorizations. All of these concerns were reduced to small print in the department's handout.

These are tough economic times and both the federal and state governments are looking to cut back rather than expand programs. The OIG report stated pharmacies are receiving large discounts off AWP and state governments are looking to cut back Medicaid reimbursements. The outlook for subsidized prescription programs is not promising but time will tell what happens in the General Assembly this year.

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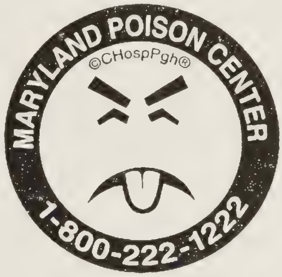
Maryland Poison Center: 30 Years and Counting!

Hard to imagine it's been 30 years since the Maryland Poison Center (MPC) arrived at the University of Maryland School of Pharmacy. Things have changed quite a bit since those early days. In 1972, the total number of calls to the MPC was 5,800. This was quite impressive since there wasn't money available for education and outreach to let people know about the service! The program was largely staffed by students who provided on-call coverage of the emergency telephone lines after "usual business hours". There was no such thing as a personal computer back then. There were few toxicology resources available that provided treatment information. In fact, there were barely any resources that documented what was in over-the-counter products! My how things have changed.

During 2000, the MPC received 58,000 calls! We are now part of a single nationwide 800 number that allows people to contact a poison center no matter where they're calling from. Whenever you call 800-222-1222, the call will be automatically routed to the poison center that serves your area. Our public education programs reached nearly 300,000 Marylanders in 2000. Over 500,000 copies of poison prevention materials and Mr. Yuk stickers were distributed throughout the state. Our professional education program trained 65 Doctor of Pharmacy Students, 11 Physician Emergency Medicine Residents, 2 Physician Family Practice Residents, 2 Physician Pediatric Residents, 1 Physician Pediatric Emergency Medicine Fellow, and 30 Bachelors of Science Paramedic students.

The MPC is staffed 24 hours a day, seven days a week by certified specialists in poison information. All poison specialists are either pharmacists or nurses who have additional toxicology training. The average tenure of staff members in the MPC is ~ 9 years. This means that the average poison specialist in the MPC has managed ~ 56,000 poisoning cases in their career. There is no better toxicology resource available.



The MPC currently has hundreds of texts devoted to some aspect of toxicology, poisoning, or medicine. Our library contains ~ 10,000 journal articles on the management of poisoning and overdose patients. We have access to computerized database systems that have information on over 800,000 chemicals, drugs, plants, snakes, cleaning solutions, etc. The MPC faculty and staff are also actively involved in research to help identify new toxic problems and to learn better ways of managing poisoning patients. As part of this research commitment, the MPC has a fellowship training program. The goal of the fellowship is to train a Doctor of Pharmacy graduate to function in a professional, administrative and research capacity in a regional poison center, clinical toxicology service and/or academic environment.

One thing that has not changed since those early days of the MPC is our commitment to providing the best poison triage, treatment and prevention information possible. Our mission is to decrease the cost and complexity of care while maintaining or improving patient outcomes. So, how are we doing? Let's look at some specific examples.

When I first joined the MPC in 1993, funding was so tight that we used students (pharmacy, nursing, or dental) to help cover the calls. Total funding for the program was < $500,000.

In 2000, we were fortunate enough to receive tremendous support from the School of Pharmacy, the University of Maryland, and the Maryland Department of Health and Mental Hygiene, and the Governor's office. Our annual budget is now ~ $1.2 million. We are able to staff the center 24 hours a day with full time poison specialists.

How does this translate into patient care? In 2000, the percentage of patients managed safely and inexpensively at home increased (67% in 1993 vs. 78% in 2000). We have improved the management of poisoning and overdose patients and have improved outcomes.

Things have changed over the past 30 years. But our commitment to our patients is the same. Here's to (at least) another 30 years of service!

Bruce D. Anderson, Pharm.D,
D.A.B.A.T., Director
Maryland Poison Center

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5. Develop criteria for effectively counseling patients' concerns on this topic

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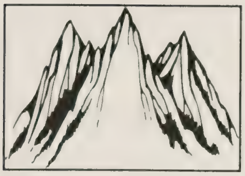
*Professional Education Services Group and Maryland Pharmacists Association have joined together to bring to its members this important Web-based CE activity at a preferred rate of $18 (access and processing fee). The regular fee for this program is $25. This program will be available beginning on Wednesday, November 21, 2001. Please use the following code when prompted to do so on the website: BBK5834** **This code is unique to the Maryland Pharmacists Association. MPhA and its members agree not distribute this code outside the association.*



Preventing Altitude Sickness

Robert Miller
Pharm.D. Candidate
University of Maryland

Altitude sickness or acute mountain sickness (AMS) is not something that is common in Maryland. The relatively low altitudes of Maryland are a factor that increases the risk of AMS when a person may travel to the higher altitudes. A ski trip to Colorado can precipitate the effects of altitude sickness especially when the traveler goes from sea level to a higher altitude in 24 hours. This may cause the ski trip to be canceled or it may cause an unwanted trip to the hospital. The incidence of AMS, in Summit County, Colorado in 1991 was 22% at altitudes of 7000-9000 feet and 42% at altitudes of 10,000 feet. Travel in unpressurized aircraft at altitudes above 8000 feet can also cause the unpleasant (and sometimes deadly) symptoms of altitude sickness.

Epidemiologic Process and Risk factors:

AMS is precipitated by ascent to high altitudes generally above 8,000 to 10,000 feet. The rate of ascent is a key determinate in whether a person will be susceptible to AMS[2]. Other factors may influence a person's susceptibility to AMS, these may include the highest altitude attained, length of stay at altitude, and physical susceptibility. Risk factors for AMS include history of AMS, residence at an altitude below 2950 feet, exertion, and preexisting cardiopulmonary conditions [1]. People who are over 50 years of age tend to be less susceptible then younger persons. Physical conditioning is an important factor in individual susceptibility to AMS but it does *not* prevent AMS.

Etiology of AMS:

The onset of physiologic changes occurs starting at about 8000 feet characterized by hyperventilation. As the person ascends above 10,000 feet a marked increase in physiologic changes due to the steep drop off of the alveolar oxygen partial pressure (PAO_2) becomes evident due to the decreased partial pressure of the inspired oxygen. The PAO_2 is 60 mm/Hg at 10,000 and drops to 40 mm/Hg at 18,000 feet [3]. The decrease of PAO_2 causes a large decrease in arterial saturation and hypoxia. Hypoxemia leads to cerebral vasodilatation and increased cerebral blood flow, which may cause mild brain edema [3]. This is manifest by symptoms such as headache, malaise, anorexia, and disturbed sleep. Above 9,500 feet AMS may be more severe and may be followed by the more severe conditions such as high altitude pulmonary edema (HAPE), high altitude cerebral edema (HACE), and high altitude retinal hemorrhages (HARH), all of which are serious medical conditions that require immediate medical intervention. [2,3].

Prevention of AMS:

Acetazolamide is a carbonic anhydrase inhibitor that causes a renal bicarbonate diuresis leading to a mild metabolic acidosis. This in turn generates increased respiratory stimulation, which leads to increased ventilation and arterial oxygenation, thus helping to alleviate insomnia, a common symptom of AMS caused by periodic breathing [2,4]. Acetazolamide may also cause a lowering of cerebral spinal fluid volume and pressure as well as a decrease in fluid retention, both of which may help to alleviate the symptoms of AMS [2,4].

The dosage of acetazolamide recommended for prophylaxis of AMS is varied. The current recommendations are 125-250 mg bid for twenty-four hours before ascent and the first two days at altitude [2,3,4]. This is recommended for those who plan to ascend from sea level to over 9600 feet in one day [1]. A gradual ascent over a period of days remains the best option and reduced the incidence of AMS by 41% without the use of drugs [2,4]. Acetazolamide is also effective in treating AMS and reduced the severity of symptoms of AMS in one study by 74% in 24 hours [2].

Recent studies have stated that 750 mg/day is the dosage that is most effective in preventing AMS. However, the data was from studies where the subjects had fast ascent rates and final altitudes above 12,800 feet [2,7]. Since this data was obtained at higher ascent rates and altitudes, its validity on dose responsiveness may be flawed[1, 5].

Acetazolamide 250 mg bid is the dosage most often recommended for preventing the symptoms of AMS [2-5]. This dosage is effective in reducing the incidence of AMS in persons who are rapidly transported to altitudes greater than 9800 feet [6].

Prophylactic therapy should be used in persons who have a past history of AMS or HAPE, a rapid gain in sleeping altitude (greater than 2950 feet), or a rapid ascent to altitudes above 9800 feet in less than one day [2,4,6]. The most common side effects include paresthesias and polyuria and the less common side effects are nausea, drowsiness, and tinnitus [4,6]. Acetazolamide is a sulfa drug and should not be used in persons with a sulfur allergy.

Dexamethasone is another drug that is used for the treatment of AMS. However, it is used for symptomatic treatment and does not promote acclimatization to altitude. The dosage for prevention of AMS is 2 mg qid or 4 mg bid. Dexamethasone is as effective as acetazolamide in preventing AMS [1]. The common side effects of dexamethasone are mood changes (depression), hyperglycemia, and dyspepsia. This drug should be used as an alternative for those who cannot take acetazolamide.

There are other drugs that have been used for symptomatic relief of AMS. Ginkgo Biloba has been reported to prevent and lesson the symptoms of AMS [1]. Aspirin 325 mg given every four hours for three doses has been shown to reduce headaches associated with AMS by up to 43% [1]. Nausea and vomiting may be treated with promethazine or prochlorperazine as needed for symptom relief. Zolpidem 10 mg may be given for insomnia as needed. This drug does not depress ventilation at high altitude.

Conclusion:

The prophylactic treatment for high altitude travelers is effective in preventing the symptoms of AMS. Acetazolamide provides protection with few side effects and promotes rapid acclimatization to altitude. Dexamethasone is also an effective treatment but it has more side effects and should be reserved when acetazolamide cannot be used.

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❦

If you have any questions about these member benefits please feel free to call the MPhA office at 410-727-0746 or e-mail us at mpha@erols.com.

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The Gene Therapy World – A Brief Introduction

By Staci Ellis

Gene therapy holds huge hopes for brilliant scientific breakthroughs. The dream of successfully influencing the outcome of myriad diseases – genetic and acquired, such as birth defects, infectious diseases, cancer, neurological disorders – may one day be a reality. Many gene therapy clinical trials are already in progress (a list of trials can be obtained at www.clinicaltrials.gov), and regular use of gene therapy products products to correct the genetic make-up of cells that have some genetic lack of functionality may come to pass within our lifetimes.

This article discusses some of the technical challenges inherent to gene therapy, as well as provides information on efforts regulatory agencies are making to help ensure recipients of this experimental technology are as safe as possible from adverse reactions and protected from non-ethical experimental design

The premise of gene therapy (also called somatic gene therapy) is that diseases may be treated or cured by correcting genetic malfunctions. Somatic gene therapy involves modifying the genetic material of living cells and transferring this modified material to affected cells in order to fight disease. Recombinant DNA technology is a method used to modify genetic material.

Recombinant DNA Technology

Recombinant DNA technology (rDNA) is the name for taking one piece of DNA and combining it with another piece of DNA. The most common recombinant process is the process of combining DNA from two different organisms. The power of rDNA technology lies in the ability to produce proteins that are naturally produced in the human body and can be manufactured in other organisms (e.g., bacteria) as a therapeutic treatment, diagnostic tool, or vaccine.

rDNA begins with a plasmid. Plasmids are small circular molecules of DNA that carry just a few genes. A piece of DNA can be inserted into plasmid DNA. The end result is a new plasmid containing the foreign DNA. The new plasmid can be deliberately introduced into bacterial cells *in vitro*, allowing those bacterial cells to incorporate the inserted gene into their own genetic makeup. The cells then replicate, thus producing copies of the inserted DNA, a technique called DNA cloning.

Recombinant DNA technology is used not only in gene therapy, but also to manufacture proteins. Many therapeutic and vaccine proteins manufactured using this process have been approved by FDA and are already on the market. The manufacture of human insulin is an example. To manufacture human insulin, the genetic sequence for human insulin production in inserted into *E. coli* DNA. The bacterial cells rapidly divide making copies of themselves. We end up with *E. coli* cells encoded for human insulin production and those cells produce insulin that is identical to insulin that occurs naturally in the body.

Vectors

The technology required to deliver corrective genetic material, or gene transfer, is accomplished through the use of a vector, or vehicle, which is the mechanism used to deliver genetic material. The challenges for gene therapy include the development of techniques for efficiently and safely delivering genetic material to the affected cells of the patient. If genes are appropriately delivered to the affected cells, the genes may persist for the life of the cell and potentially lead to a cure for the patient.[1] Sustained expression of delivered genes is another challenge for gene therapy. Most current strategies lose expression within a short period of time after delivery, and encounter difficulties with redosing.

In *in vivo* gene therapy clinical studies, vectors are used to deliver the desired gene to the cells in the human subject. The types of vectors fall broadly into two categories and include viral vectors, which use a virus to transport a gene to cells, and non-viral vectors, such as a plasmid. Each type of vector comes equipped with its own set of unique benefits and risks.

Viral Vectors

All viruses have a genetic component that is essential for further propagation of their own genetic makeup. Scientists use this natural ability of viruses to invade cells and use these viruses as vectors as an effective mode of transport of genetic material to target cells. Retroviral vectors (vectors based on retroviruses, a type of virus that contains RNA) were among the first to be designed. Viral vectors are created by removing from a virus the essential components needed for replication and replacing them with a therapeutic gene. The essential components are then made a part of the viral genome and then delivered to the target cell.[2] One of the serious risks of this method is a recombination between the vector and the viral genes (either from contamination or from viruses that were used in the manufacturing process and not completely removed), which could lead to the generation of infectious parental virus. The removal or separation of genes encoding viral components essential for viral propagation reduces the risk of generating infectious virus.[2] However, inadvertent infection of patients, and potentially their contacts, with replication competent virus present in gene therapy vector preparations must be considered before experimentation is performed.[3] Another serious drawback to viral vectors is the immune response provoked by viral proteins.

Non-Viral Vectors

Non-viral vectors include naked DNA and DNA complexed with lipids or other carrier molecules. Non-viral vectors can be produced in relatively large amounts (the size of viruses limits the size of DNA that can be delivered via viral vectors), and avoid the immune response to viral proteins. However, they are not as efficient as viral vectors, so the number of cells receiving and expressing the delivered gene is lower. Furthermore, the bacterial DNA used in non-viral vectors can provoke an inflammatory immune response.

In addition to *in vivo* gene therapy clinical trials, studies are in progress to investigate *ex vivo* gene therapy treatments. In *ex vivo* therapy, cells from the human subject (e.g., blood or bone marrow) are removed from the subject and grown in a laboratory. The cells are then exposed to the virus that is carrying the desired gene. The virus enters the cells, and the desired gene becomes part of the cells' DNA. The cells grow in the laboratory and are then returned to the subject's body by injection. An example of *ex vivo* gene therapy is growing cartilage that can be inserted into a patient's joint.

Protection of Human Research Subjects

Gene therapy is a relatively new science that is still in its developmental stage, and presents a considerable risk to human research subjects. As a result, great care is taken by regulatory agencies that oversee research in human subjects to ensure that the individual participants as well as the public's health as a whole are adequately protected. For example, all clinical research protocols (including those that involve gene therapy) conducted under a U.S. Investigational New Drug Application (IND), which is regulated by the Food and Drug Administration (FDA), must be reviewed and approved by an ethics committee, or Institutional Review Board (IRB), prior to enrollment of human participants and before they receive any investigational substance. This approval process must occur for each center that will enroll human subjects, and includes review and approval of the informed consent form that will be used for the study. IRBs must operate in accordance with the U.S. Code of Federal Regulations. Once clinical trials begin, they are monitored not only for efficacy, but also for safety, and this information is systematically collected and monitored to ensure that FDA regulations are upheld.

In addition, the Recombinant DNA Advisory Committee (RAC) provides oversight of recombinant DNA research that is Federally funded. RAC reviews gene therapy protocols and can recommend suspension of clinical trials that do not adhere to the regulations.

In 1999, an 18-year-old volunteer named Jesse Gelsinger died while participating in a gene therapy trial, possibly as a direct result of administration of a gene transfer product, as opposed to his underlying medical condition.

As a result, FDA and the National Institutes of Health (NIH) have increased their oversight of gene therapy clinical trials. FDA and NIH have since announced a new initiative that requires sponsors of gene therapy trials to submit their study monitoring plans to FDA. FDA, in turn, plans to monitor and modify these plans as necessary. This plan, the Gene Therapy Clinical Trial Monitoring Plan, will enable FDA to determine whether sponsors are following their monitoring plans. In addition, both organizations plan to increase their inspections of gene therapy studies.

In January 2001, FDA proposed a rule that would allow for the release of significant details about ongoing clinical trials in gene therapy (the rule also applies to xenotransplantation).[3] The rule requires submission for public disclosure of certain data and information related to human gene therapy or xenotransplantation. One of the goals of this rule is to provide for greater safety monitoring by FDA. NIH also has guidelines for research involving recombinant DNA molecules that provide them with additional monitoring and oversight responsibility (NIH Guidelines for Research Involving Recombinant DNA Molecules – NIH Guidelines, January 2001). In addition, NIH is close to establishing an NIH Gene Transfer Safety Assessment Board who would have the responsibility to review and analyze serious adverse event reports that result from gene therapy trials.

This new generation of potential treatments and cures require not only cutting-edge scientific expertise, but also ethical and safety sensitivity. During the last couple of decades, significant changes have been made in gene therapy research as well as its surrounding regulatory environment. New regulations and guidances set forth by the regulatory authorities attempt to provide adequate oversight for the ever-changing and advancing world of gene therapy research. As we continue to grow within the world of state-of-the-art technology, so will regulation of such products to ensure that scientific advances do not come at the expense of public safety.

An Example of Types of Diseases Under Consideration for Somatic Gene Therapy:

Various Types of Cancer
Examples: bladder, breast, colorectal, lung, metastatic melanoma, ovarian

Single-Gene Inherited Disorders
Examples: sickle cell anemia, hemophilias, inherited immune deficiency disorders (e.g., adenosine deaminase deficiency, cystic fibrosis)

Multifactorial Disorders
Examples: coronary heart disease, diabetes

Infectious Diseases
Examples: HIV, chronic infectious diseases, e.g., several types of hepatitis and herpesvirus infections

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Inserting a DNA Sample into a Plasmid, Graphics Gallery, National Health Museum, 1999, www.accessexcellence.com/AB/GG/inserting.html.

About the Author:
Staci Ellis has a Bachelor of Arts degree in English from the California State University at Northridge, and is Associate Director of Regulatory Affairs at a biotechnology company in the San Francisco Bay Area. Ms. Ellis has over nine years of industry experience.

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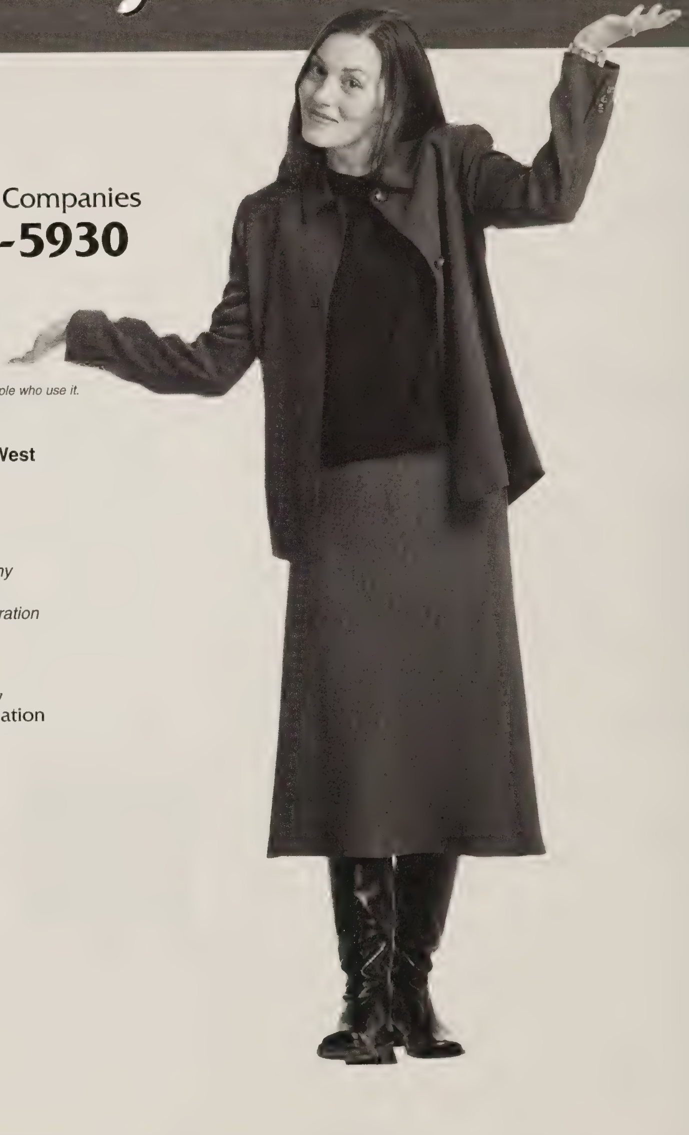

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Genetic Counseling

Kermit O. Anderson, M.Ed, M.A., C.G.C
Director, Genetic Screening Services
Kaiser Permanente, Pasadena California

A passage dating from the second century BC in the Talmud instructs mothers; "If she circumcised her first child and he died, and a second one also died, she must not circumcise her third child." Thus the first genetic counselor offered these instructions regarding a child born with a blood clotting disorder, perhaps hemophilia.[1]. Centuries of careful observation of family histories by "medical" practitioners has yielded significant understanding of the familial inheritance of many traits, disorders and diseases, becoming more formalized with the elucidation of the nature and function genetic mechanisms.

The profession of genetic counseling was established a little over 30 years ago with the first graduate training program in human genetics at Sarah Lawrence College.[2] It was built upon a foundation of genetic science begun almost a century earlier when the work of Gregor Mendel was rediscovered by researchers doing their own original work.[3] The genetics of human disease and disorders, began in the 1930's with the use of the term "medical genetics."[4] In 1945 medical geneticist Dr. Sheldon Reed coined the term "genetic counseling" to describe the complex process of providing counseling and support along with genetic information to individuals and families with genetic disorders.[5] The National Society of Genetic Counselors was formed in 1979 and there are currently 27 master's degree training programs in genetic counseling in the United States[6]. The American Board of Genetic Counseling certifies training programs and also administers a certification examination program for the graduates of these programs.

Today there are less than 1410 genetic counselors in the United States[7] serving in a variety of roles including clinical, educational, administrative and research; and in a variety of settings including university medical centers, genetic testing laboratories, health maintenance organizations and bio-tech companies. The National Society of Genetic Counselors, in 1983, defined their role:

"Genetic counselors work as members of a health-care team, providing information and support to families that have members who have birth defects or genetic disorders, or who may be at risk for a variety of inherited conditions. They identify families at risk, interpret information about the disorder, analyze inheritance patterns and risks of recurrence, discuss the risks, benefits, and limitations of genetic testing, review available options with families and provide supportive counseling. They also serve as patient advocates, educators, administrators, researchers and resource people for health-care professionals and the public. Many engage in research activities related to the field of medical genetics and genetic counseling."

Genetic counselors work as members of a health-care team.

Genetic counselors generally work under the auspices of a medical geneticist as part of a clinical genetics team that may also include perinatologists, pediatricians (a significant number of medical geneticists are pediatricians), neurologists, nurses and other allied health professionals. Genetic counselors are usually able to spend more time with individuals and families than physicians in direct patient care.

Genetic counselors provide information and support to families that have members who have birth defects or genetic disorders, or who may be at risk for a variety of inherited conditions.

The counselor will often serve as a patient educator concerning genetic disorders including risks of occurrence or recurrence, and testing options, both screening and diagnostic. The information they provide to counselees is often profoundly reassuring and anxiety reducing, as when testing for genetic defects is negative. Less often but probably more importantly, genetic counselors are frequently the first healthcare professional to contact patients with devastating information. It is in these situations, as when informing a pregnant woman that her fetus has a chromosome abnormality, that their training and experience in psychosocial dynamics is beneficial. It is here that the genetic counselor ethic of non-directiveness comes into play. The counselor is constrained to offer information and options, *not opinions*, whether they include therapeutic abortion or alternative reproductive techniques. Following a patient's decision, the counselor's job is to provide support for the decision.

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[1] http://www.mhhe.com/biosci/ap/holehaap/student/olc2/c-reading13.html

[2] http://www.slc.edu/~grad/humangenetics/index.htm

[3] http://www.accessexcellence.com/AB/BC/1900-1953.html

[4] Macklin M (1932) "Medical genetics"; a neccessity in the up-to-date curriculum. *J Hered* 23:485-486.

[5] Reed, Sheldon, Counseling in Medical Genetics, W. B. Saunders, Philadelphia 1955

[6] http://www.faseb.org/genetics/abgc/tr-prog1.htm

[7] http://www.abmg.org/genetics/abmg/stats-allyears.htm

Genetic counselors identify families at risk, interpret information about the disorder, analyze inheritance patterns and risks of recurrence, discuss the risks, benefits, and limitations of genetic testing, review available options with families and provide supportive counseling.

There are some popular misconceptions about genetic counseling that should be addressed. I would like to emphasize some things that genetic counselors do not do. Genetic counselors do not recommend that a woman terminate a pregnancy for any reason. Neither do they recommend that a woman or a couple refrain from reproduction because of a significant risk of bearing a child with a serious genetic disorder. Patient autonomy is a prime value in the counselor's approach to patient decisions. The counselor is trained to be "non-directive" when discussing options and choices with a patient. An important part of the training of genetic counselors involves recognizing and restraining their biases.

In my nearly 20 years of prenatal genetic counseling I have encountered many situations in which I had strong opinions as to what I would do were I in the patient's shoes. Invariably, the patient or couple would ask, "what would you do, if you were in our situation?" As tempting as it was to interpret the question as permission to offer my viewpoint, I always declined to give a direct answer to that question, instead re-directing the discussion to their options and the implications and consequences of their decisions. In my experience, individuals and families possess unexpected inner resources for coping with the impact of a positive genetic diagnosis.

Genetic counselors also serve as patient advocates, educators, administrators, researchers and resource people for health-care professionals and the public.

Healthcare delivery and funding continues to undergo rapid change. Managed care organizations come and go, merge and disappear almost overnight. Members are often at a loss as to how to access care. Genetic counselors are often transient case managers for patients and families undergoing screening or diagnostic procedures. Much of their work is done outside of a counseling session, obtaining medical records, coordinating appointments with other medical specialties. Primary care physicians, in particular obstetricians, have come to rely on genetic counselors to clarify for them what constitutes an appropriate referral for genetic services. Genetic counselors also educate primary and specialty physicians about the new discoveries and capabilities in genetics, how these events impact their practice and what their referral responsibilities are.

The indications for a genetic counseling referral grow more numerous with each newly cloned gene for genetic disorders. By the same token, the rapid expansion of genetic testing capabilities has sown the seeds of great expectations in the general public that the discoveries of the Human Genome Project (HGP) will bring about a revolution in medicine. They very well might, but the current clinical capabilities in medical genetics fall short of what many have been led to believe. Our ability to detect and diagnose genetic disease has advanced greatly, while our ability to treat and manage genetic disease has not kept pace. Cures for genetic disease await a deeper understanding of genetic mechanisms.

A Genetic Counseling Session

People receive genetic counseling for many reasons. Prenatal genetic counseling has become a routine community standard of care for women over 35 years of age. Other pregnancy and family history situations also account for a significant proportion of prenatal genetic counseling. Beginning in the 1970's, prior to the use of genetic amniocentesis for the prenatal diagnosis of chromosome abnormalities, there were few genetic tests to offer individuals and families who were found to be at risk for genetic disorders. Today, the list of genes for serious diseases and disorders that have been cloned and hence can be detected by direct molecular testing grows weekly.

The first order of business in any genetic counseling session is to determine why the person or family is having genetic counseling. Frequently counselees have a very different understanding of why they are having counseling from that of the counselor. A common perception of women and couples having amniocentesis counseling is that the procedure will detect all birth defects, and further, that the defects can be "cured" in utero. With the increasing exposure of the general public to news reports of genetic discoveries, patients/clients often have an inflated and unrealistic expectation of what genetic counseling or genetic testing can provide.

Upon establishing the reason for the session, the counselor then usually begins to collect information about the situation in question. A pedigree or family tree is taken. Depending on the reason for counseling, the pedigree consists of varying numbers of generations and family members, with information about dates of birth, dates and cause of death, ethnicity, pregnancy history, medical history etc. In many cases medical records confirming causes of death and accuracy of diagnoses are required in order to provide appropriate counseling. Often, these pedigree sessions will elicit information that has been buried for many years. Issues of paternity or previous pregnancies with other partners may arise to complicate a counseling situation. Protecting patient confidentiality is very important. Different members of the same family may have very different desires concerning who knows genetically pertinent information. In the field of genetics, an individual is considered in terms of their relationship to other family members. There are often complex and conflicting desires of members of the same family that must be reconciled in the course of counseling, testing and informing.

One of many such challenges can be illustrated by counseling for Huntington's disease (HD). HD is an adult onset neurological disease marked by personality changes and progressive fine and gross motor dysfunction leading to total disability and death. HD is caused by an autosomal (non-sex-linked) dominant gene. Because of its late onset, HD affected individuals can live normal lives into their forties and fifties before the first symptoms appear. Today molecular diagnosis of HD is possible at any stage in one's life, even prenatally. At risk individuals, i.e. persons with affected parents or grandparents, can have as high as 50% chance of developing the condition. At risk persons in the same family may feel very differently about whether or not they wish to know if they have the gene for HD. An at risk person may wish not to know his/her genotype, thus their fate, while a spouse or child may have very good reasons for wanting to know the genotype of the at risk person. These situations can be extremely difficult to resolve requiring supportive counseling and the involvement of other healthcare team members such as social workers, psychologists and psychiatrists.

The counseling session can be a single meeting or require multiple sessions, sometimes involving many family members. It can involve presenting genetic risks and testing options to individuals or collecting specimens from multiple family members over the course of several sessions.

When the counselor has gathered the pertinent patient and family data, he/she is ready to inform the patient concerning their genetic risks, risks of procedures, the form and reliability of results, and options available. In some cases, separate counseling appointments are scheduled for informing patients/clients of the results of genetic tests.

Future Challenges

With the mapping of the human genome, the field of medical genetics is poised to expand from a medical specialty concerned with relatively uncommon disorders, to a medical practice concerned with the genetic components of much more common disorders like heart disease, cancer and diabetes. The genetic components of these ailments are considerably more complex than the Mendelian patterns of single gene inheritance. Testing and counseling in these realms will involve very different issues with much greater uncertainty. The analysis of fetal chromosomes for abnormalities is relatively straightforward. If the chromosomes reveal Down syndrome, there is a close to 100% likelihood that the fetus actually has Down syndrome. Whereas, in the new terrain of *genetic predisposition*, test results must be interpreted with much more caution. For example, in the case of mutations in the BRCA1 and BRCA2 genes, which confer an increased risk for developing breast or ovarian cancer, the genetic counselor must ensure that counselees understand the following information before any testing:

Ten percent of breast or ovarian cancers are the related to mutations in the BRCA1 or BRCA2 genes.

A positive test for one of the known deleterious mutations in BRCA1 or BRCA2 confers a 40%-90% risk for developing breast cancer in their lifetime[8].

A negative test for such a mutation does not mean that the risk for these cancers is 0%, but remains 10-12%, which is the general population lifetime risk.

Testing positive for one of the deleterious mutations in these genes may affect the ability to obtain life and or medical insurance, even though such genetic discrimination is prohibited by law.[9]

The increasing ability to perform DNA testing for many genetic disorders has dramatically changed the practice of clinical genetics. In the past, genetic counseling was sought *after* a disease was made manifest in a family. The genetic information presented was usually the risk of occurrence or recurrence of a disorder based on Mendelian probability. Now, direct DNA testing can determine one's genotype, *before* the appearance of symptoms, or even prior to birth. This has tremendous implications to individuals and families, many of which go beyond the medical and psychosocial realms to include areas of insurability, employability and other potentially discriminatory situations.

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[8] Chang-Claude J (2001) Inherited genetic susceptibility to breast cancer. *IARC Sci Publ 154;177-90.*

[9] http://www.nationalpartnership.org/healthcare/hipaa/guide.htm

While anticipated advances in gene therapy have failed to meet the expectations of healthcare providers, the new fields of pharmacogenetics and pharmacogenomics promise to elucidate relationships between genotype and differential response to drug therapies. This will lead to treatments for many disorders tailored to individuals based on genetic markers. In this new century it can be expected that genetic counselors will be challenged to play a major role in translating these thrilling discoveries into clinical application, significantly impacting every area of medical practice.

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Rx AND THE LAW

By Don McGuire, R.Ph., J.D.

This series, **Pharmacy and the Law**, is presented by Pharmacists Mutual Insurance Company and your State Pharmacy Association through Pharmacy Marketing Group, Inc., a company dedicated to providing quality products and services to the pharmacy community.

"WE DID EVERYTHING RIGHT"

The following scenario has been played out hundreds of times during the past few years. Bob Palmer had had his prescriptions filled for many years at Brown's Pharmacy. He had always been happy with the service he received from Anne and Charles, the pharmacists at Brown's Pharmacy. Bob had taken Rezulin® for two years prior to its withdrawal. He later read the large ad in the daily newspaper telling people that they may be entitled to compensation if they had taken Rezulin®. Was he entitled to compensation? Bob decided to call the number in the paper the next day. Charles and Anne were soon served with a lawsuit naming the pharmacy as a defendant. Their reaction was: "*What's going on here? We did everything right and we still got sued!*"

Welcome to the world of products liability. Following on the heels of asbestos and tobacco litigation, the tactics learned in those cases are now being applied to drugs. The first cases were phen/fen and Redux®. The success there spawned the continuation of these types of suits as successive drugs were withdrawn from the market. Following close behind was Duract®, Rezulin®, and Propulsid®. Then there was phenylpropanolamine, Stadol® nasal spray, and just recently, Baycol®. The difference in these instances is that, in addition to the manufacturer, the pharmacy and the pharmacists are also targets. Along with the products liability claims, the typical lawsuit also alleges that the pharmacist failed to perform an adequate DUR and/or failed to warn the patient about the hazards of the drug. These professional activities are then tied to the products liability case.

The theory behind products liability law is that consumers are entitled to compensation when defective or dangerous products injure them. Products liability law includes everyone in the chain of distribution: the retailer, the wholesaler, and the manufacturer. Many states' laws allow the retailer to pass the claim up the chain to the manufacturer, provided the manufacturer is known and is capable of paying the claim. The manufacturers are facing a difficult decision. Continuing the sale of a drug after reports of adverse events sets them up for products liability claims, while withdrawal of the product is seen as an indication that the product is unsafe. Should prescription drugs be treated the same as asbestos, lawnmowers, or stepladders?

Prescription drugs are unique because, by their very nature, they cannot be completely safe. They have side effects, both known and unknown. But withholding them from the market because they are not completely safe will prevent other patients from receiving the benefits they can provide. This is a risk/benefit decision made by the FDA based on the immense amount of data and information submitted to the FDA prior to the product ever appearing on the pharmacies' shelves. The purpose of the pre-market review is to make sure the product is safe and effective, and also as an efficiency measure. It would be extremely cumbersome and expensive to have pharmacies all across the country carrying out their own studies. The pharmacist should be able to rely on this review as an indication that the product is at least minimally safe to dispense.

This trend is not likely to end anytime soon. What can pharmacists do to protect themselves? It's not always easy to predict which product is going to be the next to be removed from the market, so pharmacists can only protect themselves from the allegations regarding their professional duties. A pharmacist must do their job.

Know the product and its labeling. This includes the proper dose, the duration of therapy, and contraindications. If the prescription calls for an unlabeled use, be aware of the rationale for and the propriety of that off-label use. This does not mean that prescriptions cannot be filled for unlabeled uses, they can. It means only that the pharmacist should be aware.

Perform an effective drug utilization review on every new prescription. Pay attention to the help that computer warnings can give, but do not rely entirely on the computer system.

Heed all new information provided by the manufacturers in a "Dear Doctor" or "Dear Health Professional" letter. Keep this information available for use in DUR and counseling because there may be a time lag before it is included in the software. Keep copies of the letters with a date stamp to indicate when they were received in the pharmacy.

Provide effective counseling to patients. This may mean more thorough counseling of all patients than is required by state law. Provide both verbal and written information. This counseling should also include new information as provided by the manufacturer.

Pharmacists should document their dispensing activities, especially any interventions. The pharmacy and pharmacist should be able to show that all of the dispensing functions were performed, by whom they were performed, and how they were performed.

While these steps won't insure that a pharmacist or pharmacy is never going to be included in a products liability suit, this type of documentation can help the pharmacy to negate claims of professional negligence. It will help to insure that the true products liability claim can be passed up the chain of distribution. It may also greatly assist in obtaining an outright dismissal of the pharmacy or pharmacist from the suit. Performing your professional duties effectively is your best protection.

©Don McGuire, R.Ph., is a Professional Claims Attorney at Pharmacists Mutual Insurance Company.

This article discusses general principles of law and risk management. It is not intended as legal advice. Pharmacists should consult their own attorneys and insurance companies for specific advice. Pharmacists should be familiar with the policies and procedures of their employers and insurance companies, and act accordingly.

Continuing Education for Pharmacists

Volume XVIII, No. 3

Patient Counseling: Plant Ingestions and Poisoning; Part 2: Plants, Mushrooms, and Herbals

Thomas A. Gossel, R.Ph., Ph.D.
Professor of Pharmacology and Toxicology
Ohio Northern University
Ada, Ohio

and

J. Richard Wuest, R.Ph., Pharm.D.
Professor of Pharmacy Practice
University of Cincinnati
Cincinnati, Ohio

Goals. The goals of this lesson are to describe the incidence and circumstance of toxic plant ingestions and potential poisoning, list symptoms of toxicity, and discuss treatment options where appropriate.

Objectives. At the conclusion of this lesson, successful participants should be able to:

1. identify plants that are purported to cause toxic symptoms when ingested;
2. select from a list components of plants that cause toxicity and describe their site, mechanism, and symptoms of poisoning;
3. choose from a list appropriate steps in the management of plant-induced poisoning; and,
4. demonstrate an understanding of advice to convey to patients who request information on potential plant toxicity.

A professional development program made possible by an educational grant from

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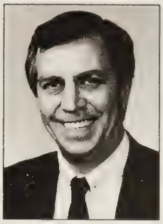
Gossel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This is the second of a two-part series. Part 1 provided general information about the topic. It also presented specific information relative to poisoning by a variety of common houseplants and other cultivated plants. Part 2 continues the discussion.

Rhubarb. Leaves of the rhubarb plant *(Rheum rhaponticum)* contain oxalic acid. Rhubarb stems are used as food and are not toxic. Rhubarb leaves, on the other hand, are occasionally used inappropriately to embellish salads, or cooked as a side dish. Heating does not destroy the toxic principle.

Once absorbed, oxalic acid combines with calcium from the blood to form insoluble calcium oxalate. Calcium oxalate may crystallize in the renal tubules and, if severe, block them to cause acute renal failure. A single bite of rhubarb leaf is usually not sufficient to cause systemic toxicity, but multiple ingestions may be. Symptoms of poisoning include nausea and vomiting, weakness, and muscle cramps.

Ingestions should be treated with emesis, followed by milk (a source of calcium) or calcium hydroxide solution (lime water). Calcium combines with oxalic acid in the GI tract before it is absorbed to form insoluble calcium oxalate which is excreted in the feces. Calcium salts may be administered intravenously to replace calcium which might be lost from the blood from oxalic acid that was absorbed. Intravenous fluids should be given to help prevent accumulation of the calcium oxalate precipitate in the renal tubules.

Nightshade. Bittersweet or woody nightshade *(Solanum dulcamara),* black or common nightshade *(Solanum nigrum),* and the deadly nightshade *(Atropa belladonna)* belong to the Solanaceae family. The woody nightshade is reported to be commonly ingested, but it is not considered to be lethal in quantities normally eaten, and usually induces little more than gastrointestinal irritation. Ingestion of several berries may be a greater cause for concern.

The plant to avoid at all cost is the deadly nightshade. It contains atropine at a concentration of 0.25 to 0.5 percent. This quantity may be lethal if ingested in sufficient quantity.

Symptoms of poisoning and their management are similar to those for jimsonweed, discussed below. Fortunately, deadly nightshade intoxication is rare in the U.S. since the plant does not grow well in this country.

Jimsonweed. Also known as locoweed, thornapple, green dragon, and angel's trumpet, jimsonweed *(Datura stramonium)* is a hearty weed that grows to a height of three

Table 1
Signs and Symptoms of Jimsonweed Ingestion*

Signs and Symptoms	No. of Patients	% of Patients	Not Recorded
hallucinations	26	100	3
disorientation	27	100	2
mydriasis	29	100	--
dry mucous membranes	16/17	94	12
flushed face	11/13	85	16
combative state	20	74	2
tachycardia	21	72	--
blood pressure alterations	15	52	--
temperature >38.2° C	3	10	--

*Total number of patients = 29. From Sherevette RE *et al*: *Pediatrics*; 63:520-523.

to five feet. It is commonly encountered throughout most of the U.S. It grows wild along roadsides, in pastures, and among rows of crops in many farming communities. All parts of the plant are toxic, but the seeds have the highest concentration of toxin.

Unilateral mydriasis and other mild symptoms of intoxication have been reported in farmers following contact or inhalation of dust from plants that have been destroyed by harvesting equipment. Children have died after ingesting the flowers. Poisoning by teenagers and others who ingested a concoction made from infusing seeds in water has been reported in rural areas of the nation.

The fruit pods that appear in the fall each contain 50 to 100 brown-black seeds. Ten seeds contain approximately 1 mg of atropine. Other alkaloids present throughout the plant include hyoscyamine and hyoscine in varying proportions. As little as four to five grams of the leaves or seeds can be fatal.

Symptoms of toxicity include typical manifestations of anticholinergic poisoning, including blurred vision, dry mouth, constipation, CNS stimulation, euphoria, delirium, terrifying hallucinations, tachycardia, hyperthermia, and coma. A study involving 29 patients who ingested jimsonweed revealed the composite symptoms noted in Table 1. Hallucinations were especially vivid, visual being the most common (e.g., insects on the wall, persons being chased by wild animals, etc.). Disorientation to time, person, and/or place was also prevalent.

Patients with jimsonweed intoxication must be treated quickly. Following gastric decontamination by emesis, physostigmine salicylate given intravenously is the preferred antidote.

Physostigmine is a reversible cholinesterase inhibitor. Thus, it promotes accumulation of endogenous acetylcholine, which competes with the poison for muscarinic receptor sites to reverse toxic symptoms. While other cholinesterase inhibitors (e.g., neostigmine) may benefit the victim by increasing acetylcholine concentration at peripheral sites, they do not cross the blood-brain-barrier in sufficient concentration because they are quaternary amines. They are, therefore, ineffective in reversing the central components of toxicity. Physostigmine is a tertiary amine and enters the CNS readily.

Poisoned patients should be hospitalized and monitored closely since a deranged mental state may persist for 72 hours or longer. Even days after apparent recovery, victims of jimsonweed poisoning have been known to wander aimlessly into dangerous territory and die of exposure or trauma, or into a lake, pond, or swimming pool and drown.

Pokeweed. The boiled shoots of pokeweed (*Phytolacca americana*) are edible delicacies. They are processed and canned for use in the home. However, pokeweed can be extremely dangerous if it is prepared improperly.

Pokeweed's clumps of shiny purple berries (inkberries) are attractive to children who may associate them with grapes or other fruits. The berries do not usually cause severe toxicity in the amounts normally ingested. However, when pokeweed berries are macerated into juice and consumed, this concentrated form can be toxic.

Pokeweed roots are the most toxic part of the plant, and are mistaken occasionally for horseradish or parsnips, or used to brew herbal teas. The roots contain toxic substances that have not yet been identified.

Symptoms of toxicity include burning in the mouth, nausea and vomiting, visual disturbances, weak pulse, and respiratory difficulties.

Poisoning is best treated by removing all traces of the plant from the stomach, then administering sequential doses of activated charcoal and a saline cathartic. Specific symptoms are treated as necessary.

Cyanogenic Plants. Several plants contain cyanogenic glycosides such as amygdalin, prulaurasin, and prunasin in their leaves, stems, bark, and seed pits, but not in their pulpy, edible fruits. Cyanogenic glycosides are found predominantly in trees of the *Prunus* species. Some common examples include apple *(Prunus sylvestris)*, apricot *(P. armeniaca)*, cherry *(P. cerasus)*, and peach *(P. persica)*. These trees contain amygdalin. Warming or crushing the seeds of these plants causes a characteristic bitter almond or peach pit odor that is associated with cyanide poisoning.

When ingested, the cyanogenic glycosides are hydrolyzed in alkaline medium to hydrocyanic acid. Cyanide-containing plants may induce all of the symptoms of cyanide toxicity including weakness, dizziness, headache, tachypnea (quick, shallow breathing), and tachycardia. These may be followed by apnea (transient cessation of breathing), generalized convulsions, and death.

Mushrooms. Toxic mushrooms account for 50 to 100 of the nearly 5,000 species that grow in the U.S. The number of cases of mushroom poisoning is increasing as a result of the popularity of wild mushroom consumption. The picture of poisoning is often unpredictable, and various species may produce variable symptoms and require individualized treatment.

Some mushrooms are poisonous only if eaten raw. Others cause symptoms only if ingested during certain stages of growth. Differences in soil composition may influence the potential to cause toxicity. The problem is compounded because poisonous mushrooms may grow next to nonpoisonous varieties. A rule of thumb is that wild mushrooms should never be consumed unless accurate identification is possible.

Mushrooms of the genus *Amanita* are responsible for almost all cases of mushroom poisoning in this country. This is especially true for *Amanita muscaria* and *A. phalloides* (Death Cap). Ingestion of as little as one-third of a cap of *A. phalloides* may be fatal to a child, and one-half of a cap may be fatal to an adult. *A. phalloides* is reported to be responsible for over 95 percent of all deaths from mushroom poisoning.

Amanita mushrooms contain a mixture of cyclopeptides, including phalloidin, phalloin, and amanitin congeners, all stable to heat. Muscarine is the primary toxin in *Clitocybe* and *Inocybe*. It provokes symptoms of poisoning within a few minutes to hours.

Onset of symptoms from phalloidin, phalloin, or amanitin may be delayed up to 24 hours. Fatal cases of Amanita poisoning reported in one study revealed an average latent period of onset of 10.3 hours. The amatoxins (primarily alpha-amanitin), more than the phallotoxins, are responsible for the lethality of *A. phalloides* mushrooms. These toxins inhibit nuclear RNA polymerase II which, in turn, blocks protein synthesis, leading to cellular death.

> *"There are old mushroom hunters,*
> *And bold mushroom hunters,*
> *But there are no*
> *Old, bold mushroom hunters."*

Table 2
Examples of Psychoactive Substances Used in Herbal Preparations

Ingredient	Pharmacologic Principle	Reported Effects
California poppy	Alkaloids and glucosides	mild euphoria
Catnip	Nepetalactone	mild hallucinogen
Cinnamon	Unknown	mild stimulant
Hydrangea	Hydrangin, saponin, cyanogenes	stimulant
Juniper	Unknown	strong hallucinogen
Lobella	Lobeline	mild euphoria
Mandrake	Scopolamine, hyoscyamine	hallucinogen
Nutmeg	Myristicin	hallucinogen
Passion flower	Harmine alkaloids	mild stimulant
Periwinkle	Indole alkaloids	hallucinogen
Prickly poppy	Protopine, bergerine, isoquinilines	narcotic analgesic
Valerian	Chatinine, velerine alkaloids	tranquilizer
Wild lettuce	Lactucarine	mild narcotic analgesic

Their primary site of toxic action is the gastrointestinal mucosa, hepatocytes, and renal tubular cells. Hepatic cells are especially susceptible to damage because of their rapid uptake of the toxin.

Symptoms of mushroom poisoning vary widely among various species. Most non-lethal plants produce symptoms early after ingestion. If the onset of symptoms is delayed for several hours, ingestion of *A. phalloides* is likely. Because the patient may remain asymptomatic for up to 24 hours following ingestion, the victim or physician may not suspect mushroom poisoning.

The characteristics of poisoning by cyclopeptides in *A. phalloides* can be described in three stages. Within six to 24 hours, there may be an abrupt onset of severe abdominal pain. This may be associated with profuse diarrhea and emesis. The next 24 to 48 hours are often marked by apparent recovery as symptoms improve. During this time, however, destruction of kidney and liver cells is ongoing.

The third phase, which occurs about three to five days post-ingestion, is characterized by hepatocellular damage and renal insufficiency. Circulatory failure may follow later, with the victim becoming jaundiced and lapsing into a hepatic coma within a week. Death normally occurs in four to seven days following *Amanita* consumption.

Victims of poisonous mushroom ingestions should receive supportive care, including fluid replacement and correction of metabolic disturbances. The death rate from poisoning by *A. phalloides* in untreated victims is reported to be 50 to 90 percent. With proper treatment, however, this rate may be reduced to 20 to 25 percent or less.

If ingestion of *A. muscaria* is suspected, syrup of ipecac should be administered at once, and the patient observed for signs and symptoms of toxicity for at least three hours. Early manifestations are primarily CNS depression. Supportive care is usually sufficient.

If the time since ingestion of *A. phalloides* is less than four hours, ipecac-induced emesis may be beneficial. Since onset of signs and symptoms is normally delayed, it is unlikely that the victim of poisoning will realize his intoxication prior to four hours. Activated charcoal and cathartics have been recommended.

Table 3
Examples of Nontoxic Houseplants

Common Name	Botanical Name
African Violet	*Saintpaulia ionantha* or *Episcia reptans*
Aluminum plant	*Pilea cadierei*
Aralia, false	*Dizygotheca elegantissima*
Baby's tears	*Helxine soleirolii*
Begonia	*Begonia semperflorens*
Boston fern	*Nephrolepis exaltata*
Christmas cactus	*Schlumberga bridgesii*
Coleus	*Coleus blumei*
Corn plant	*Dracena fragrans*
Creeping Charlie	*Pilea nummularifolia*
Creeping Jennie	*Lysimachia nummularia*
Fiddleleaf fig	*Ficus lyrata*
Gardenia	*Gardenia radicans*
Grape ivy	*Cissus rhombifolia*
Hawaiian ti	*Cordyline terminalis*
Hens and chickens	*Echeveria spp.; Sempervivum tectorus*
Jade plant	*Crassula argentea*
Lipstick plant	*Aeschynanthus lobbianus*
Mother-in-law tongue	*Sansevieria trifasciata*
Prayer plant	*Maranta leuconeura*
Rubber plant	*Ficus elastica*
Sensitive plant	*Mimosa pudica*
Snake plant	*Sansevieria trifasciata*
Spider plant	*Chlorophytum comosum*
String of hearts	*Creopegia woodii*
Swedish ivy	*Plectranthus australis*
Umbrella plant (Schefflera)	*Brassaia actinophylla*
Wandering Jew	*Tradescantia albiflora; Zebrina pendula*
Wax plant	*Hoya carnosa* or *H. exotica*
Weeping fig	*Fiscus benjamina*
Zebra plant	*Aphelandra squarrosa*

It should be noted that several different species have identical common names. Some may cause diarrhea in infants.

A variety of potential antidotes have been suggested to treat *A. phalloides* poisonings. None has demonstrated a conclusively positive outcome.

One that has been recommended is thioctic acid (alpha-lipoic acid). This is a Krebs cycle coenzyme used experimentally for treatment of poisoning by Amanita or the rare *Galerina* species. Thioctic acid protects against hepatocellular damage by an unknown mechanism. It must be given early after ingestion of the toxic mushroom.

Penicillin G and corticosteroids have also been used in the past. They were reported to limit hepatotoxicity by competing with amanitin for binding on serum proteins, thereby leaving more toxin free for renal excretion. The most promising new treatment for *Amanita* mushroom poisoning may be silibinin. Silibinin is a water-soluble form of silymarin, from milk thistle. Its mechanism of action, if applicable, remains unknown. The clinical usefulness of these drugs in treatment of *A. phalloides* poisoning has not been proven.

Herbal Intoxication. Herbal remedies were once the mainstay for treatment of most illnesses of Colonial Americans. Their use in health care declined by the 1960s. This trend has reversed in recent years due to increased interest in alternative medicines.

While many herbal remedies are safe, and may even be pharmacologically worthwhile, others can be lethal if misused. Numerous articles and case histories of poisoning with these substances can be found in the professional literature.

The extent of potential toxic action is broad. One specific concern involves the toxic psychoactive effects that are reported with a large number of herbs. They are rolled into cigarettes, boiled into tea, or taken in capsulated form. Also, herbs and herbal products may originate in countries other than the U.S., and their exact composition may not always be known.

Table 2 lists a sampling of psychoactive substances, along with their reported effects. Unfortunately, many of the users may not suspect that these effects can occur, since herbs are often viewed as foods rather than as drugs.

Overview and Summary

A wide variety of plant ingestions may induce clinically significant adverse symptoms. Most ingestions cause little harm other than irritation of the mouth or stimulation of nausea or vomiting. However, there are some very toxic plants, and their ingestion must be treated as any other toxic emergency. A list of nontoxic plants is presented in Table 3.

To date, few medical problems have been reported from ingesting herbal remedies. However, the potential for a toxic or allergic response to these preparations is present.

Continuing Education Quiz

This month's questions are taken from the article on "Patient Counseling: Plant Ingestions and Poisoning; Part 2: Plants, Mushrooms and Herbals." Circle your answers to the following questions and mail the entire page to Maryland Pharmacist CE, 650 W. Lombard Street, Baltimore, MD 21201-1572. There is no charge for this quiz for MPhA members (non-members $ 10.00). The completed quiz for this issue must be received by 3/15/03. A continuing education certificate for one and one-half contact hours (0.15 CEUs) will be mailed to you within six to eight weeks. Please type or print clearly. ACPE# 129-144-00-003-H01.

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The Maryland Pharmacy Continuing Education Coordinating Council and the Ohio Pharmacists Foundation are both approved providers of continuing pharmaceutical education for pharmacists by the American Council on Pharmaceutical Education.

1. The chemical in rhubarb leaves that has the potential for causing toxicity is:
   a. atropine.
   b. citric acid.
   c. cyanide.
   d. oxalic acid.

2. Which of the following is recommended for use in treating toxicity caused by the chemical referred to in question #1 above?
   a. Aluminum sulfate
   b. Calcium hydroxide
   c. Magnesium oxide
   d. Sodium bicarbonate

3. The toxic substance contained in deadly nightshade is:
   a. atropine.
   b. citric acid.
   c. cyanide.
   d. oxalic acid.

4. Jimsonweed is referred to by all of the following names EXCEPT:
   a. locoweed.
   b. angel's trumpet.
   c. deadly nightshade.
   d. green dragon.

5. Which of the parts of jimsonweed has the highest concentration of toxin?
   a. Berries
   b. Leaves
   c. Seeds
   d. Stems

6. Physostigmine is the antidote of choice for poisoning from a plant that contains atropine because physostigmine is a(n):
   a. angiotensin converting enzyme inhibitor.
   b. anticholinergic.
   c. coumarin derivative.
   d. cholinesterase inhibitor.

7. All of the following are symptoms of pokeweed poisoning EXCEPT:
   a. rapid pulse.
   b. burning in the mouth.
   c. visual disturbances.
   d. nausea and vomiting.

8. All of the following are cyanogenic fruits EXCEPT:
   a. apricots.
   b. cherries.
   c. grapefruit.
   d. peaches.

9. The number of toxic mushroom species that grow in the U.S. is estimated to be:
   a. 5 to 10.
   b. 50 to 100.
   c. 500 to 1000.
   d. 5000 to 10,000.

10. Which of the following is NOT a primary site of toxic action of the cyclopeptides contained in Amanita mushrooms?
   a. Gastrointestinal mucosa
   b. Renal tubular cells
   c. Hepatocytes
   d. Neurons

The ACPE# for "Patient Counseling: Treatment of Head Lice Infestations" in the July/August/September 2001 Journal was incorrect. The correct number is 129-144-00-010-H01

Statement of Ownership, Management and Circulation

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I certify that the above statements made by me above are correct and complete: Howard Schiff, Editor

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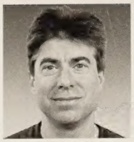
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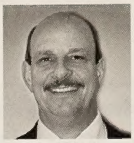
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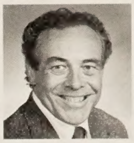
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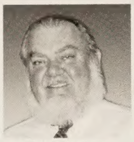
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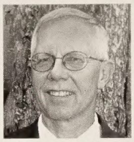
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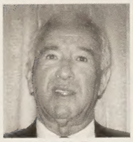
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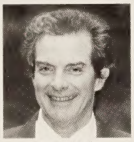
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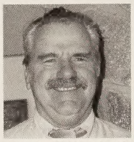
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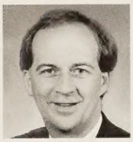
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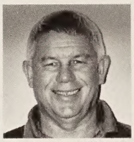
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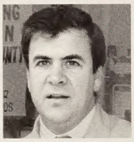
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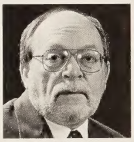
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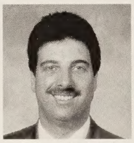
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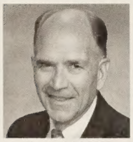
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